



# ML910™ Rugged Notebook User Guide



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*Owner's Manual R01.2*  
*Part Number: 6871008P31-B*



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This Warranty applies within the fifty (50) United States, the District of Columbia, and Canada.

# LIMITED WARRANTY

## MOTOROLA COMMUNICATION PRODUCTS

If the affected product is being purchased pursuant to a written Communications System Agreement signed by Motorola, the warranty contained in that written agreement will apply. Otherwise, the following warranty applies.

### **I. WHAT THIS WARRANTY COVERS AND FOR HOW LONG:**

Motorola Inc. or if applicable, Motorola Canada Limited ("Motorola") warrants the Motorola manufactured radio communications product ("Product") against material defects in material and workmanship under normal use and service for a period of Three (3) Years from the date of shipment. Accessories, including batteries carry their own separate limited One (1) year warranty.

Motorola, at its option, will at no charge either repair the Product (with new or reconditioned parts), replace it with the same or equivalent Product (using new or reconditioned Product), or refund the purchase price of the product during the warranty period provided purchaser notifies Motorola according to the terms of this warranty. Repaired or replaced Product is warranted for the balance of the original applicable warranty period. All replaced parts of the Product shall become the property of Motorola.

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Motorola cannot be responsible in any way for any ancillary equipment not furnished by Motorola which is attached to or used in connection with the product, or for operation of the Product with any ancillary equipment and all such equipment is expressly excluded from this warranty. Because each system which may use the Product is unique, Motorola disclaims liability for range, coverage, or operation of the system as a whole under this warranty.

### **II. GENERAL PROVISIONS:**

This warranty sets forth the full extent Motorola's responsibilities regarding the product. Repair replacement or Refund of the purchase price, at Motorola's option, is the exclusive remedy.



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### **III. HOW TO GET WARRANTY SERVICE:**

Purchaser must notify Motorola's representative or call Motorola's Customer Response Center at 1.800.247.2346 within the applicable warranty period for information regarding warranty service.

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- B) Defects or damage from misuse, accident, water, or neglect.
- C) Defects or damage from improper testing, operation, maintenance, installation, alteration, modification, or adjustment.
- D) Breakage or damage to antennas unless caused directly by defects in material workmanship.
- E) A Product subjected to unauthorized Product modifications, disassemblies or repairs (including, without limitation, the addition to the Product of non-Motorola supplied equipment) which adversely affect performance of the Product or interfere with Motorola's normal warranty inspection and testing of the Product to verify any warranty claim.
- F) Product which has had the serial number removed or made illegible.
- G) Accessories, including batteries carry their own separate limited One (1) year warranty.
- H) Freight costs to the repair depot.
- I) A Product which, due to illegal or unauthorized alteration of the software/firmware in the Product, does not function in accordance with Motorola's published specifications or with the FCC type acceptance labeling in effect for the Product at the time the Product was initially distributed from Motorola.
- J) Scratches or other cosmetic damage to Product surfaces that do not affect the operation of the Product.
- K) That the software in the product will meet the purchaser's requirements or that the operation of the software will be uninterrupted or error-free.
- L) Normal and customary wear and tear.

- M) Non-Motorola manufactured equipment unless bearing a Motorola Part Number in the form of an alphanumeric number (e.g., TDE6030B).

## **V. GOVERNING LAW**

In the case of a Product sold in the United States and Canada, this Warranty is governed by the laws of the State of Illinois and the Province of Ontario respectively.

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- A) That Motorola will be notified promptly in writing by such purchaser of any notice of such claim;
- B) That Motorola will have sole control of the defense of such suit and all negotiations for its settlement or compromise;
- C) Should the Product or its parts become, or in Motorola's opinion be likely to become, the subject of a claim of infringement of a United States patent, that such purchaser will permit Motorola, at its option and expense, either to procure for such purchaser the right to continue using the product or its parts or to replace or modify the same so that it becomes non-infringing or to grant such purchaser a credit for the Product or its parts as depredated and accept its return. The depreciation will be an equal amount per year over the lifetime of the product or its parts as established by Motorola.

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# Regulatory Information

## SAFE USAGE NOTIFICATION

For reasons of personal safety and optimal radio performance, Motorola has designed the ML910™ RUGGED NOTEBOOK with the intended purpose and position of use either in a secured vehicle docking station or on top of an office desk.

Motorola strongly recommends using this product in a vehicle only when it is physically-secured in a docking station or assured-stationary location as failure to do so may cause the product to cause harm during accidents or other conditions.

## US and Canada Class B Regulations

### USA

Federal Communications Commission Radio Frequency Interference Statement

**NOTE:**

This equipment has been tested and found to comply with the limits for a Class B digital device pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Any changes or modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment.

**Please note:**

The use of a non-shielded interface cable with this equipment is prohibited.

## Wireless LAN Module Statement



### FCC CAUTION:

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

If the ML910 RUGGED NOTEBOOK computer has the Intel 3945abg module (802.11abg) installed, operation on the 5.15-5.25GHz frequency band is restricted to indoor use only. The FCC requires indoor use for the 5.15-5.25GHz band to reduce the potential for harmful interference to co-channel Mobile Satellite Systems.

When the internal ML910 RUGGED NOTEBOOK 802.11abg module is configured to the Motorola default state, it will only transmit on the 5.15-5.25GHz band when associated with an access point (AP) that uses the 5.15-5.25GHz band and such applications should only be used indoors.

Use in the 802.11a frequency range is limited to client-AP association. Client-client association (Ad hoc mode) is not supported.

### External Wide Area Modem Antenna Statement

When connecting an external wide area modem antenna to the ML910 (via the vehicle docking station), only use antennas specified in the supported accessories list in chapter 9 of this manual. Use of an external amplifier between the ML910 and the external antenna is restricted.

### FCC External Antenna Placement

When the Motorola WMC6300 or WMC7300 PCMCIA radio modems are integrated in the PCMCIA slot of the ML910 RUGGED NOTEBOOK, the external antenna must be placed as shown in the picture below to comply with FCC RF exposure requirements.



### **FCC RF Exposure Statement**

This equipment complies with FCC RF exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of between the radiator and all persons. See page 1-13 of the Users Guide for antenna locations.

To assure continued compliance, any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

### **FCC RF Exposure Warning**

The ML910 RUGGED NOTEBOOK provides a PCMCIA slot that could be used with PCMCIA based wireless transmitters. Motorola only supports the use of PCMCIA based wireless transmitter cards that have been approved for use in the ML910 RUGGED NOTEBOOK. Currently the WMC6300, WMC7300, and WDE1000 have been approved. Other 3rd party PCMCIA based wireless transmitters have not been RF exposure evaluated for use in the ML910 RUGGED NOTEBOOK and may not comply with FCC RF exposure requirements.

### **IMPORTANT NOTE:**

To comply with FCC RF exposure compliance requirements, the antennas used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter other than those approved for use in Motorola series ML910 RUGGED NOTEBOOK.

## **Canada**

### **Canadian Department of Communications**

#### **Radio Interference Regulations Class B Compliance Notice**

This Class B digital apparatus meets all requirements of the Canada Interference-Causing equipment regulations.

Cet appareil numérique de Classe B respecte toutes les exigences du Règlement Canadien sur le matériel brouilleur.

This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de la classe B prescrites dans le Règlement sur le brouillage radioélectrique édicté par le ministère des Communications du Canada.

# CMM labeling and Disclosure Table

The People's Republic of China require that our products comply with China Management Methods (CMM) environmental regulations. (China Management Methods refers to the Regulation Management Methods for Controlling Pollution by Electronic Information Products.) Two items are used to demonstrate compliance; the Label and the Disclosure Table.

The label is placed in a customer visible position on the product. The first of the following examples means that the product contains no hazardous substances; the second means that the product contains hazardous substances, and has an Environmental Friendly Use Period (EFUP) of fifty years.



The Environmental Friendly Use Period (EFUP) is the period (in years) during which the Toxic and Hazardous Substances (T&HS) contained in the Electronic Information Product (EIP) will not leak or mutate causing environmental pollution, or bodily injury from the use of the EIP.

The Disclosure Table, printed in simplified Chinese, is included with each customer order. An example of a Disclosure Table (in both Chinese and English) follows:

Disclosure table

部件名称	有毒有害物质或元素					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr <sup>6+</sup> )	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
金属部件	×	○	×	×	○	○
电路模块	×	○	×	×	○	○
电缆及电缆组件	×	○	×	×	○	○
塑料和聚合物部件	○	○	○	○	○	×
<p>○： 表示该有毒有害物质在该部件所有均质材料中的含量均在 SJ/T11363-2006 标准规定的限量要求以下。</p> <p>×： 表示该有毒有害物质至少在该部件的某一均质材料中的含量超出SJ/T11363-2006 标准规定的限量要求。</p>						

# European Union CE Marking and Compliance Notices

## Statements of Compliance

### **English**

This product follows the provisions of the European Directive 1999/5/EC.

### **Danish**

Dette produkt er i overensstemmelse med det europæiske direktiv 1999/5/EC.

### **Dutch**

Dit product is in navolging van de bepalingen van Europees Directief 1999/5/EC.

### **Finnish**

Tämä tuote noudattaa EU-direktiivin 1999/5/EC määräyksiä.

### **French**

Ce produit est conforme aux exigences de la Directive Européenne 1999/5/EC.

### **German**

Dieses Produkt entspricht den Bestimmungen der Europäischen Richtlinie 1999/5/EC.

### **Greek**

Το προϊόν αυτό πληροί τις προβλέψεις της Ευρωπαϊκής Οδηγίας 1999/5/EC.

### **Icelandic**

Þessi vara stenst reglugerð Evrópska Efnahags Bandalagsins númer 1999/5/EC.

### **Italian**

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### **Norwegian**

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### **Portuguese**

Este produto cumpre com as normas da Diretiva Europeia 1999/5/EC.

### **Spanish**

Este producto cumple con las normas del Directivo Europeo 1999/5/EC.

### **Swedish**

Denna produkt har tillverkats i enlighet med EG-direktiv 1999/5/EC.

## Local Restrictions of 802.11a/b/g Radio Usage



### **CAUTION:**

Due to the fact that the frequencies used by 802.11a/b/g wireless LAN devices may not yet be harmonized in all countries, 802.11a/b/g products are designed for use only in specific countries or regions, and is not allowed to be operated in countries or regions other than those of designated use. As a user of these products, you are responsible for ensuring that the products are used only in the countries or regions for which they were intended and for verifying that they are configured with the correct selection of frequency and channel for the country or region of use. Any deviation from permissible settings and restrictions in the country or region of use could be an infringement of local law and may be punished as such.

The European variant is intended for use throughout the European Economic Area. However, authorization for use is further restricted in particular countries or regions within countries, as follows:

### **General**

European standards dictate maximum radiated transmit power of 100 mW Effective Isotropic Radiated Power (EIRP) in the frequency range 2400 – 2483.5 MHz.

### **Belgium and the Netherlands**

In Belgium and the Netherlands, the product may not be used outdoors. See the instructions next under the heading “How To Turn Off the Wireless LAN Radio”.



## France

### Departments in Which the Wireless LAN Module Can Be Used (Indoors Only)

The wireless LAN module can currently be used indoors only in the following 38 **departments** of mainland France. Please turn off your wireless LAN radio when operating the device in areas/places other than the 38 **departments** listed below:

01	Ain Orientales	36	Indre	66	Pyrénées
02	Aisne	37	Indre et Loire	67	Bas Rhin
03	Allier	41	Loir et Cher	68	Haut Rhin
05	Hautes Alpes	42	Loire	70	Haute Saône
08	Ardennes	45	Loiret	71	Saône et Loire
09	Ariège	50	Manche	75	Paris
11	Aude	55	Meuse	82	Tarn et Garonne
12	Aveyron	58	Nièvre	84	Vaucluse
16	Charente	59	Nord	88	Vosges
24	Dordogne	60	Oise	89	Yonne
25	Doubs	61	Orne	90	Territoire de Belfort
26	Drôme	63	Puy du Dôme	94	Val de Marne
32	Gers	64	Pyrénées Atlantique		

**Departments** in which the Wireless LAN Module's maximum EIRP is not shown in the previous table

Frequency Range (MHz)	Indoors	Outdoors
2400 – 2446.5	10 mW	Not permitted
2446.5 – 2483.5	100 mW	100 mW on private property with Ministry of Defense approval

## How To Turn Off the Wireless LAN Radio

### NOTE:

1. Turning the wireless LAN radio off is not the same as disabling the wireless LAN card.
2. It is not necessary to disable the card to meet the regulatory requirements.
3. While operating the computer in those French **departments** that do not allow use of the wireless LAN equipment, the user of the equipment must turn off the wireless LAN radio in order to comply with local regulations.

# Product Safety and RF Exposure Information



## **CAUTION:**

BEFORE USING ML910 RUGGED NOTEBOOK, READ THIS SECTION WHICH CONTAINS IMPORTANT OPERATING INSTRUCTIONS FOR SAFE USAGE AND RF ENERGY AWARENESS AND CONTROL INFORMATION FOR COMPLIANCE WITH RF ENERGY EXPOSURE LIMITS IN APPLICABLE NATIONAL AND INTERNATIONAL STANDARDS.

## Compliance with RF Energy Exposure Standards

### **NOTE:**

ML910 RUGGED NOTEBOOK is intended for general population, consumer or similar use; where users are not necessarily aware of the potential for exposure and may not exercise control over their exposure. This product safety section includes useful information about RF exposure and helpful instructions on how to control your RF exposures. For additional information on exposure requirements or other training information, visit <http://www.motorola.com/rfhealth>.

## Radio Frequency Interference Requirements and SAR

The FCC with its action in ET Docket 93-62 has adopted a safety standard for human exposure to Radio Frequency (RF) electromagnetic energy emitted by FCC certified equipment. All wireless modules meets the Human Exposure limits found in OET Bulletin 65, 2001 and IEEE Std C95.1™-2005. Proper operation of this radio according to the instructions found in this manual will result in exposure substantially below the FCC's recommended limits. The following safety precautions should be observed:

- Do not touch or move antenna while the unit is transmitting or receiving.
- Do not operate the radio or attempt to transmit data unless the antenna is connected; if not, the radio may be damaged.

## Electromagnetic Interference/Compatibility

### **NOTE:**

Nearly every electronic device is susceptible to electromagnetic interference (EMI) if inadequately shielded, designed or otherwise configured for electromagnetic compatibility.

## Facilities

To avoid electromagnetic interference and/or compatibility conflicts, turn off your ML910 RUGGED NOTEBOOK and/or integrated radios in any facility where posted notices instruct you to do so. Hospitals or health care facilities may be using equipment that is sensitive to external RF energy.

## Aircraft

When instructed to do so, turn off your ML910 RUGGED NOTEBOOK and/or integrated radios when on board an aircraft. Any use of a ML910 RUGGED NOTEBOOK or radio must be in accordance with applicable regulations per airline crew instructions.

## Medical Devices

### Pacemakers

Keep the antennas of ML910 RUGGED NOTEBOOK at least 8 inches (20cm) away from any person's body. Along with ensuring compliance with the RF energy exposure limits (as instructed in the RF Energy Exposure section previously), this separation distance meets or exceeds the distance recommendation of pacemaker manufacturers and the FCC to avoid interference with pacemakers.

### Hearing Aids

Some digital wireless radios may interfere with some hearing aids. In the event of such interference, you may want to consult your hearing aid manufacturer to discuss alternatives.

### Other Medical Devices

If you use any other personal medical device, consult the manufacturer of your device to determine if it is adequately shielded from RF energy. Your physician may be able to assist you in obtaining this information.

### Driver Safety

Always abide by the laws and regulations on the use of computers and/or integrated radios in the area where you drive.

#### **When using ML910 RUGGED NOTEBOOK and/or radio while driving, please:**

- Give full attention to driving and to the road.
- Pull off the road and park before using the equipment if driving conditions so require.

## Operational Warnings

### For Vehicles with an Air Bag

Do not place a ML910 RUGGED NOTEBOOK in the area over an air bag or in the air bag deployment area. Air bags inflate with great force. If a ML910 RUGGED NOTEBOOK is placed in the air bag deployment area and the air bag inflates, ML910 RUGGED NOTEBOOK may be propelled with great force and cause serious injury to occupants of the vehicle.

### Potentially Explosive Atmospheres

Turn off your ML910 RUGGED NOTEBOOK prior to entering any area with a potentially explosive atmosphere. Do not remove, install, or charge batteries in such areas.

Sparks in a potentially explosive atmosphere can cause an explosion or fire resulting in bodily injury or even death. The areas with potentially explosive atmospheres referred to above include fueling areas such as below decks on boats, fuel or chemical transfer or storage facilities, areas where the air contains chemicals or particles, such as grain, dust or metal powders. Areas with potentially explosive atmospheres are often but not always posted.

## Blasting Caps and Areas

To avoid possible interference with blasting operations, turn off ML910 RUGGED NOTEBOOK when you are near electrical blasting caps, in a blasting area, or in areas posted: "Turn off two-way radio". Obey all signs and instructions.

## Operational Cautions

### Antennas

Do not use the integrated radios of any ML910 RUGGED NOTEBOOK that has a damaged antenna. If a damaged antenna comes into contact with your skin, a minor burn can result.

### Batteries

All batteries can cause property damage and/or bodily injury such as burns if conductive materials such as jewelry, keys, or beaded chains touch exposed terminals. The conductive material may complete an electrical circuit (short circuit) and become quite hot. Exercise care in handling any charged battery, particularly when placing it inside a pocket, purse, or other container with metal objects.

Some portable devices use an internal, permanent backup battery that may contain very small amounts of perchlorate. In such cases, California law requires the following label: Perchlorate Material – special handling may apply, See [www.dtsc.ca.gov/hazardouswaste/perchlorate](http://www.dtsc.ca.gov/hazardouswaste/perchlorate). There is no special handling required by consumers.

## About the Battery



### Caution Texts Concerning Lithium Batteries

#### DANISH



#### ADVARSEL!

Lithiumbatteri - Eksplosionsfare ved fejlagtig håndtering. Udskiftning må kun ske med batteri af samme fabrikat og type. Levér det brugte batteri tilbage til leverandøren.

#### NORWEGIAN



#### ADVARSEL:

Eksplosjonsfare ved feilaktig skifte av batteri. Benytt samme batteritype eller en tilsvarende type anbefalt av apparatfabrikanten. Brukte batterier kasseres i henhold til fabrikantens instruksjoner.

#### SWEDISH



#### VARNING:

Explosionsfara vid felaktigt batteribyte. Använd samma batterityp eller en ekvivalent typ som rekommenderas av apparattillverkaren. Kassera använt batteri enligt fabrikantens instruktion.

#### FINNISH



#### VAROITUS:

Paristo voi räjähtää, jos se on virheellisesti asennettu. Vaihda paristo ainoastaan valmistajan suosittelemaan tyyppiin. Hävitä käytetty paristo valmistajan ohjeiden mukaisesti.

#### ENGLISH



#### CAUTION:

Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the equipment manufacturer. Discard used batteries according to manufacturer's instructions.

#### German



#### VORSICHT:

Explosionsgefahr bei unsachgemäßem Austausch der Batterie. Ersatz nur durch denselben oder einen vom Hersteller empfohlenen gleich-wertigen Typ. Entsorgung gebrauchter Batterien nach Angaben des Herstellers.

#### FRENCH



#### ATTENTION:

Il y a danger d'explosion s'il y a remplacement incorrect de la batterie. Remplacer uniquement avec une batterie du même type ou d'un type équivalent recommandé par le constructeur. Mettre au rebut les batteries usagées conformément aux instructions du fabricant.



#### Attention (for USA Users)

The product that you have purchased contains a rechargeable battery. The battery is recyclable. At the end of its useful life, under various state and local laws, it may be illegal to

dispose of this battery into the municipal waste stream. Check with your local solid waste officials for details in your area for recycling options or proper disposal.

## About the Modem

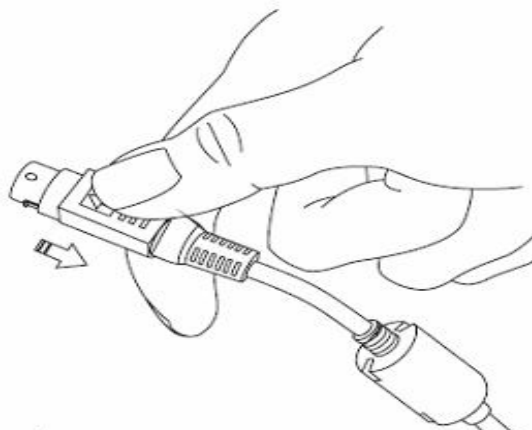


### CAUTION:

1. Never install telephone wiring during a lightning storm.
2. Never install telephone jacks in wet locations unless the jack is specifically designed for wet locations.
3. Never touch uninsulated telephone wires or terminals unless the telephone line has been disconnected at the network interface.
4. Use caution when installing or modifying telephone lines.
5. Avoid using the telephone function (other than a cordless-type) during an electrical storm. There may be a remote risk of electric shock from lightning.
6. Do not use the telephone function to report a gas leak in the vicinity of the leak.
7. Do not use this product near water, for example near a bathtub, wash bowl, kitchen sink or laundry tub, in a wet basement or near a swimming pool.

## About the AC Adapter

1. Use only the AC adapter supplied with your computer. Use of another type of AC adapter will result in malfunction and/or danger.
2. Do not use the adapter in a high moisture environment. Never touch the adapter when your hands or feet are wet.
3. Allow adequate ventilation around the adapter when using it to operate the device or charge the battery. Do not cover the AC adapter with paper or other objects that will reduce cooling. Do not use the AC adapter while it is inside a carrying case.
4. Connect the adapter to a proper power source. The voltage requirements are found on the product case and/or packaging.
5. Do not use the adapter if the cord becomes damaged.
6. Do not attempt to service the unit. There are no serviceable parts inside. Replace the unit if it is damaged or exposed to excess moisture.



 CAUTION! DO NOT PULL THE WIRE TO UNPLUG!

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# Preface

This user guide contains information that will help you operate the computer. It is divided into 10 chapters and 4 appendices.

Chapter 1, **Getting Started**, takes you through the process of setting up the computer and identifying its external components.

Chapter 2, **Operating Your Computer**, tells you how to use the computer's components and features.

Chapter 3, **Managing Power**, provides information on power.

Chapter 4, **Expanding Your Computer**, provides information on installing and using peripheral devices.

Chapter 5, **BIOS Setup Utility and ML User Application (MLUA)**, describes the BIOS program that configures the computer's BIOS settings.

Chapter 6, **Installing Software Drivers**, describes how to install the drivers and utilities supplied with the computer.

Chapter 7, **Caring for the Computer**, gives you tips in care and maintenance.

Chapter 8, **Troubleshooting**, gives solutions to common problems you may encounter when using the computer.

Chapter 9, **The Accessories List**, List of replacement accessories.

Chapter 10, **The Acronyms and Glossary**, Manual-related glossary of terms.

Appendix A, **Specifications**, gives a brief specification of the computer.

Appendix B, **Fingerprint Recognition**, gives a brief description of fingerprint recognition sensor.

Appendix C **Self Install Internal Wireless Modems**, provides the instructions on how to install various internal wireless modems certified for use in the ML910 RUGGED NOTEBOOK

Appendix D, **RoHS / WEEE**, World Wide RoHS / WEEE Standard.

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# ***Getting Started***

Congratulations on your purchase of the ML910 RUGGED NOTEBOOK.

This high performance notebook computer is especially designed for the practical applications of warehouses, automobiles, vehicles, public security, repairing, assisting the handicapped, and other demanding situations where conventional notebook computers just cannot measure up.

This chapter first tells you step by step how to get the computer up and running. You will find instructions for these procedures:

- Unpacking
- Installing and Initializing Battery Pack
- Connecting to the AC power
- Opening the cover
- Turning on the computer
- Turning off the computer

Then, you will find a section briefly introducing the external components of the computer. The last section navigates you to the information you may need after the computer is ready for use.

# Getting the Computer Running

This section guides you through the procedures for getting the computer ready for operation.

## Unpacking

After unpacking the shipping carton, you should find these standard items:

- Notebook computer
- Accessories:
  - AC adapter (100~240 VAC, 50/60 Hz)
  - AC power cord (US)
  - Battery
  - DVD including Drivers and User Guide
  - Windows XP or Windows Vista Business edition Operating System DVD
  - PCMCIA to Express 34 Card Converter
  - Nero OEM Suite DVD

Inspect all the items. If any item is damaged or missing, notify your dealer immediately.

Keep the shipping carton and packing materials in case you need to ship or store the computer in the future.

## Installing the Battery Pack

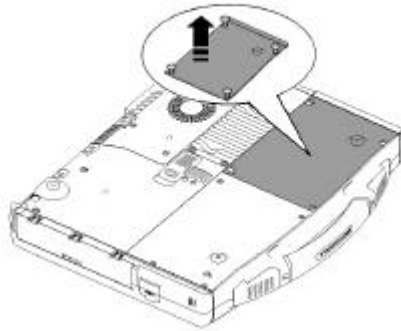


### CAUTION:

1. There is danger of damage if the battery is incorrectly installed.
2. Do not attempt to disassemble the battery pack.

To install the battery pack, follow these steps:

1. Make sure the computer is not on or connected to the AC power.
2. Loosen the four screws and lift the battery pack compartment cover to take it off the computer.



3. Insert the battery pack into the compartment.
4. Replace the compartment cover and secure the four screws.

## Initializing the Battery Pack

You need to initialize the new battery pack before using it for the first time. New battery packs are warehoused and shipped to customers only partially charged to ensure maximum life when they are placed into service. The battery charging indicator above the keyboard may blink red to indicate a low battery condition.

Initializing is the process of fully charging the new pack and may take several hours.

1. Make sure the computer is turned off. Connect the AC adapter to fully charge the battery pack. The AC indicator will illuminate (green) and the battery charging indicator will glow amber.
2. After the battery pack is fully charged the charging indicator will turn to green. You may now turn on the computer.

**NOTE:**

The ML910 will recondition the battery as necessary on a scheduled basis. There is no need for the user to do this manually.

## Connecting to AC Power

The computer operates on either external AC power or internal battery power. We recommend that you use AC power when you start up the computer for the first time.



### CAUTION:

Use only the AC adapter included with your computer. Use of any other AC adapters may damage the computer.

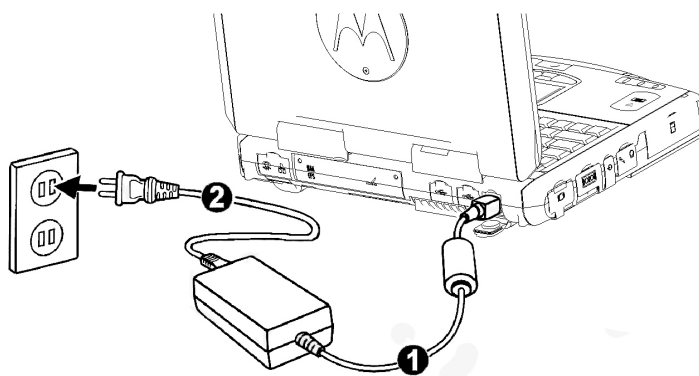
### NOTE:

#### Power Supply Cord:

**For US territory:** Detachable, minimum 1.8m long. Listed, rated minimum 125V, 2.5A, having a 3/18 AWG, flexible cord. One end terminates with a molded-on, attachments plug with a 10A, 125V (NEMA 5–15) configuration; other end terminates with a molded-on appliance coupler.

**For UK territory:** Detachable, minimum 1.8m long. Listed, rated minimum 250V, 2.5A, having a 3/0.75mm<sup>2</sup>, flexible cord. One end terminates with a molded-on, attachments plug with a 3A, 250V (BS1363), and 3 A fuse configuration; other end terminates with a molded-on appliance coupler.

1. Make sure the computer is turned off.
2. Plug the DC cord of the AC adapter to the power connector on the rear side of the computer (❶).
3. Plug the female end of the AC power cord to the AC adapter and the male end to an electrical outlet (❷).



4. When the AC adapter is connected, the indicator on the AC adapter lights up, indicating that power is being supplied from the electrical outlet to the AC adapter and onto your computer. Now, you are ready to turn on the computer.



### CAUTION:

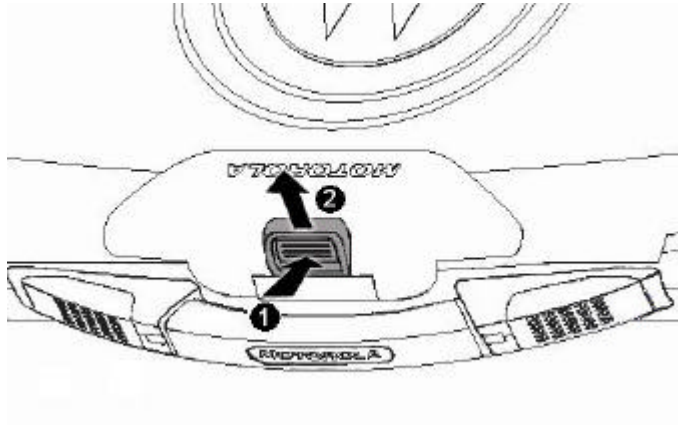
1. When you disconnect the AC adapter, disconnect from the electrical outlet first and then from the computer. A reverse procedure may damage the AC adapter or the computer.
2. When unplugging the connector, always hold the plug head. Never pull on the cord.



**NOTE:**

When the AC adapter is connected, it also charges the battery pack. For information on using battery power, see Chapter 3.

## Opening the Cover

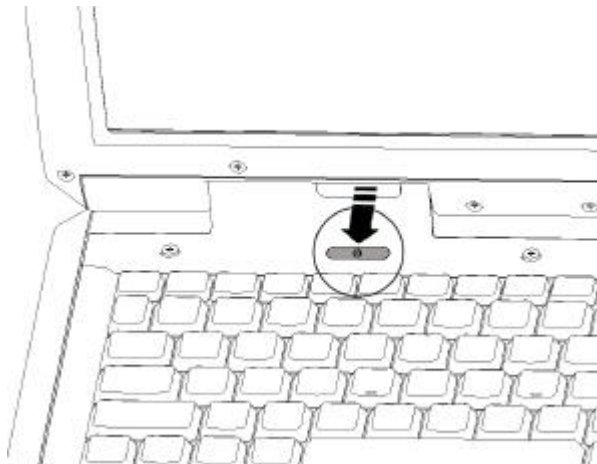


1. Press the top cover latch
2. Lift up the cover. You can tilt the cover forward or backward for optimal viewing clarity.

## Turning On and Off the Computer

### Turning On

1. Make sure the computer has a charged battery or is connected to the AC power supply.
2. Press the power button.



3. Each time the computer is turned on, it performs a Power-On Self Test (POST), and the operating system (such as Windows) should load.

## Turning Off

To turn off the computer safely, use the “Shut Down” command of your operating system.

**NOTE:**

1. Pressing the power button for 4 seconds or longer will shut the computer off. If the power button is held for 10 seconds or more once the computer is turned off, this will cause the internal controller to reset.
2. There are other ways to turn off the computer that can allow you to return to the state where you left off. Please refer to “Shutting Down the Computer” in Chapter 2 for more information.

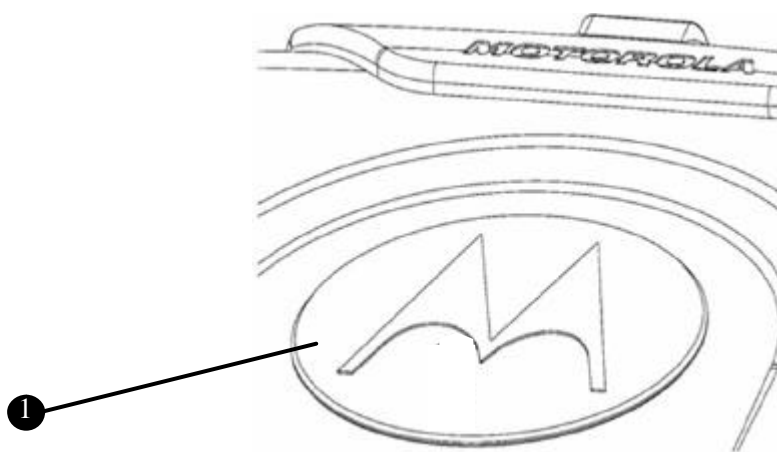
# Taking a Look at the Computer

This section identifies the external components of the computer and briefly describes the function of each component.

**NOTE:**

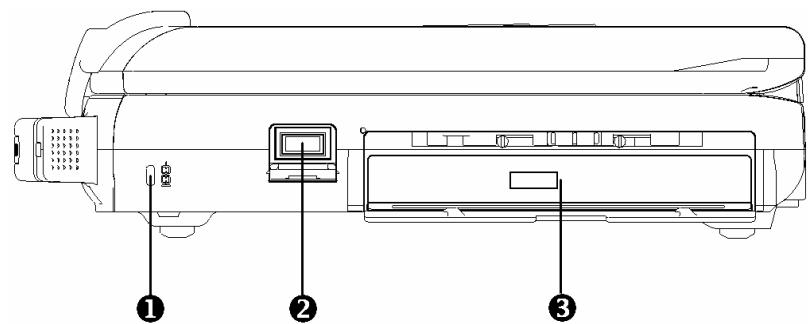
Depending on the model you purchased, the appearance of your computer may not exactly be the same as those shown in this user guide.

## Top of the Computer



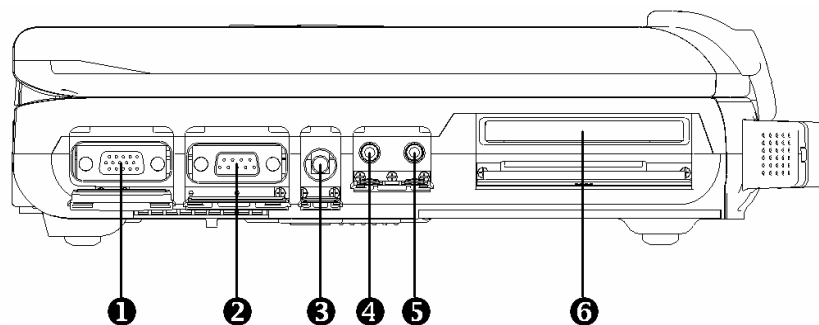
Ref	Component	Description	See Also
①	Internal Modem Compartment	Behind the M logo is a compartment which provides the various connections for installing internal modems.	C-2

# Right-Side Components



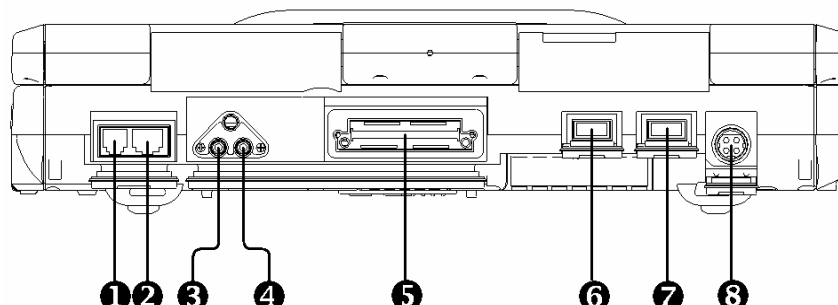
Ref	Component	Description	See Also
❶	Security Lock Slot	Connects an optional security lock to anchor the computer to a desk or other large object.	
❷	USB Port	Supports USB 2.0 (i.e. USB High Speed Devices) and Legacy USB Full and Low Speed Devices (i.e. USB 1.1 and USB 1.0); and up to 1A load for each USB Port.	P. 4-3
❸	Configurable Media Bay	Accepts an Optical Disk Drive (ODD) for installing or loading software, accessing data, and playing music/video. This bay can also accept the optional second battery or second hard drive.	P. 2-12

## Left-Side Components



Ref	Component	Description	See Also
①	<b>VGA Port</b>	Connects an external monitor.	P. 4-2
②	<b>Serial Port</b>	Connects a RS-232 device.	P. 4-4
③	<b>Video Capture Port</b>	This is a video input port that can connect to a video capture device. (i.e. analog video camera)	P. 4-5
④	<b>Microphone Connector</b>	Connects an external microphone.	P. 2-18
⑤	<b>Audio Output Connector</b>	Connects a set of headphones, external speakers with amplifier, or an audio recording device. The audio jack also supports S/PDIF optical standard and is capable of interfacing a mini-toslink for optical S/PDIF.	P. 2-18
⑥	<b>PC Card Slot</b>	Accepts a Type II PCMCIA/CardBus card or ExpressCard/34 via Express Card adapter for additional functions.	P. A-2

## Rear Components



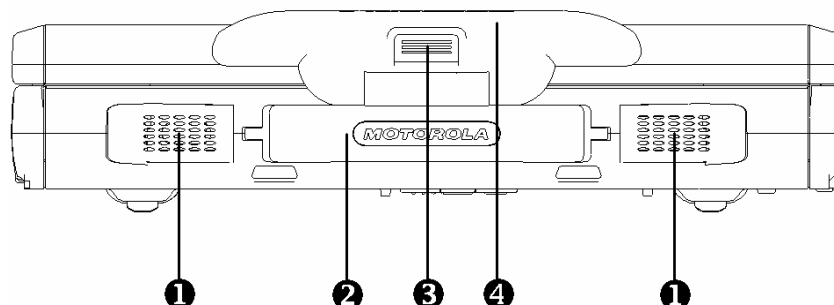
Ref	Component	Description	See Also
①	RJ-11 Port	Connects the telephone line.	P. 2-20
②	RJ-45 Port	Connects the LAN cable. Included a link indicator and an active indicator.	P. 2-19
③	GPS RF pass through Port	Serves as the interface between the system and external GPS antenna, in conjunction with a Vehicle Docking station.	P. 2-25
④	WWAN Module RF pass through Port	Serves as the interface between the system and antenna of the optional WWAN module, in conjunction with a Vehicle Docking station.	P. 2-21
⑤	Docking Port	For connecting to an Office Port Replicator or Vehicle Dock (both are available as an option).	
⑥	USB Port 1	Supports USB2.0 (i.e. USB High Speed Devices) and Legacy USB Full and Low Speed Devices (i.e. USB 1.1 and YSB1.0); and up to 1A load for each USB Port.	P. 4-3
⑦	USB Port 2		
⑧	Power Connector	Connects the AC adapter.	P. 1-4



### CAUTION:

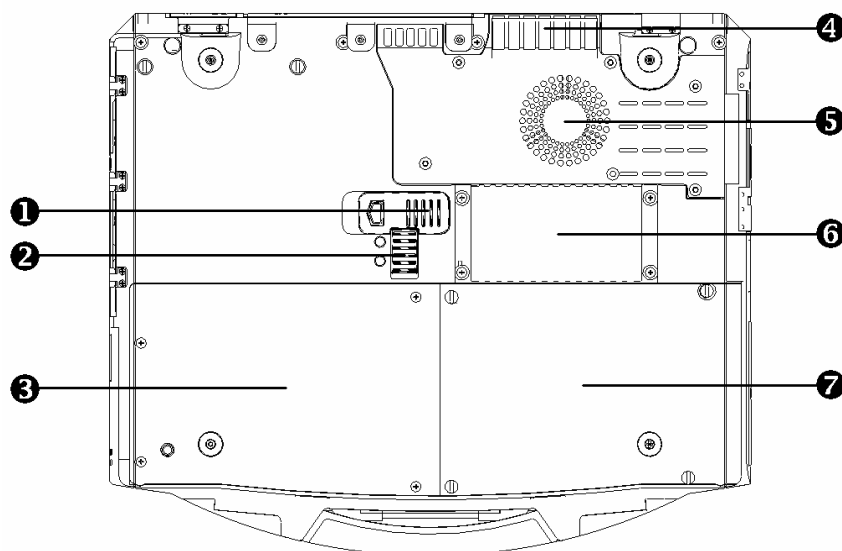
For protection against transient over-voltages from the environment, the RF Pass-through Port for the GPS and WWAN should only be engaged using the docking station, supplementary steps may be necessary when doing an external installation."

## Front Components



Ref	Component	Description	See Also
①	<b>Stereo Speaker Set</b>	Output stereo audio from the computer.	P. 2–18
②	<b>Handle</b>	Allows you to carry your computer with an easy grip.	
③	<b>Top Cover Latch</b>	Locks the top cover.	P. 1–5
④	<b>GPS Antenna (optional)</b>	Serves as an antenna for the Global Positioning System (GPS). It is built into the top cover.	P. 2–25

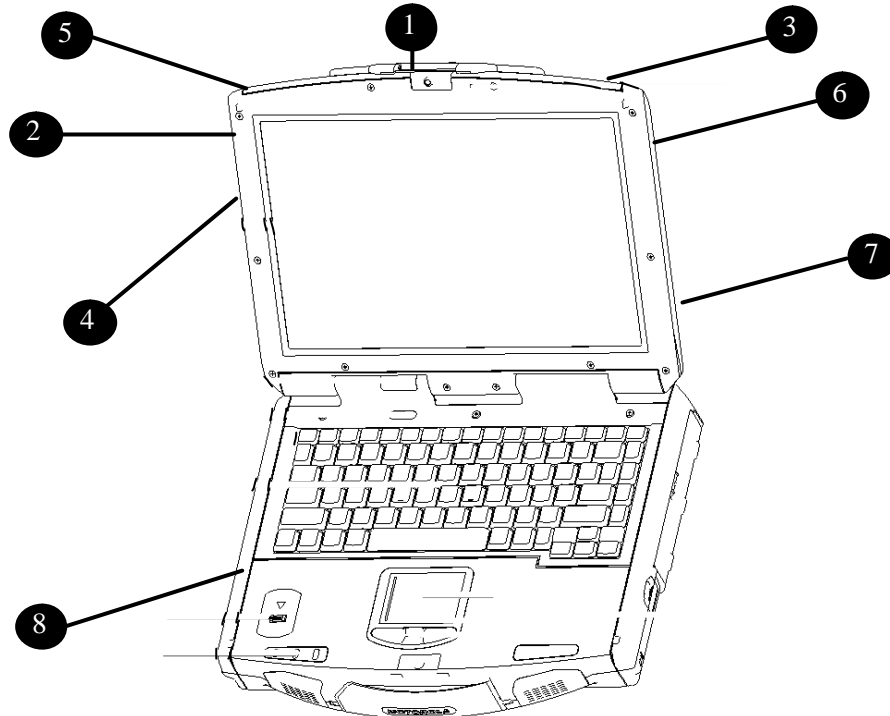
## Bottom-Side Components



Ref	Component	Description	See Also
①	<b>Configurable Media Bay Eject Latch</b>	Allows you to remove the Optical Disk Drive, Second Battery or Second Hard Drive.	P. 2-15
②	<b>Configurable Media Bay Lock / Unlock Switch</b>	Allows you to lock the Optical Disk Drive, Second Battery or Second Hard Drive in place.	P. 2-13
③	<b>Hard Disk Drive Compartment</b>	Contains the hard disk drive of your computer.	P. 2-11
④	<b>Ventilation Openings</b>	Allow for air circulation to prevent overheating and do not cover or block the ventilation openings.	
⑤	<b>CPU Cooling Fan</b>	Contains cooling fan to protect it from overheating.	
⑥	<b>Memory Compartment</b>	Contains the memory compartment for expanding the memory size of your computer.	P. 4-6
⑦	<b>Main Battery Pack Compartment</b>	Supplies power to your computer when the external power is not connected.	P. 1-2

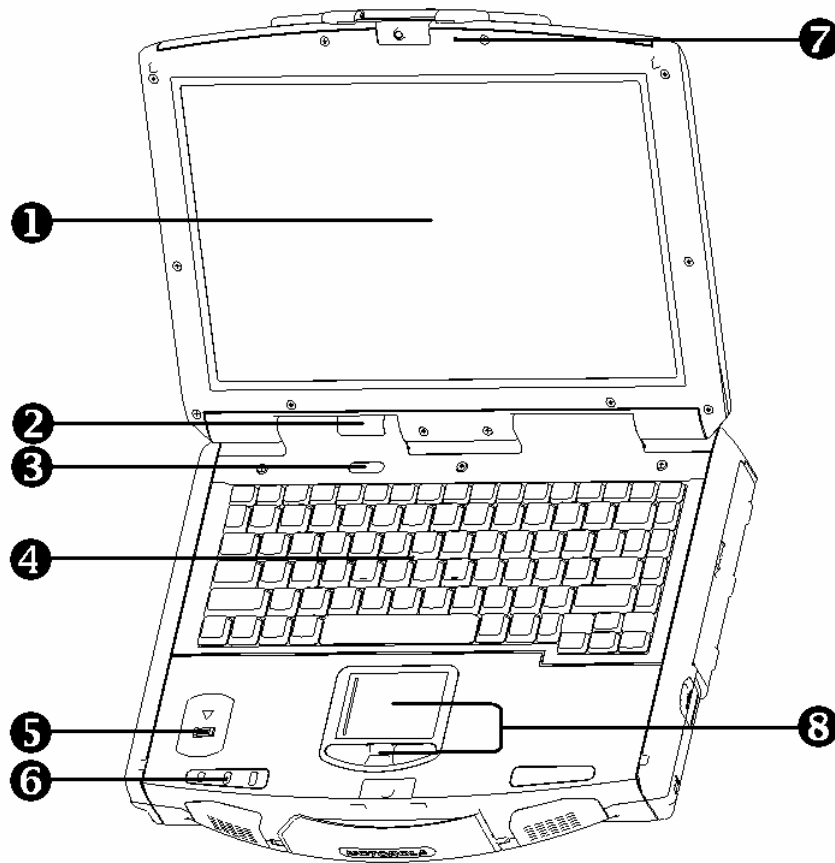




## Antenna Location (Integrated Radio Modems)








Ref	Component	Description	See Also
①	GPS Antenna	Optional GPS Receiver	
②	External PCMCIA Antenna Mount Location	WMC6300 & WMC7300	
③	WWAN Antenna 1	Primary – TX and RX -- MC8775 and MC5725	
④	WLAN Antenna 1	Primary TX and RX	
⑤	WWAN Antenna 2	Secondary – RX only -- MC5725	
⑥	WLAN Antenna 2	Secondary – RX only	
⑦	Bluetooth	Antenna	
⑧	External PCMCIA Antenna Location	WDE1000	

## Top-Open Components



Ref	Component	Description	See Also
①	LCD Screen with touch panel	Displays the output of the computer.	P.2-10
②	<b>Device Indicators</b>    	Show the current status of the computer's devices.	
		Power on: Green color.	P. 3-2 & 3
		Standby mode: Amber color.	
		Hard disk drive in-use: Amber color (Blinking).	P. 2-11
		Hard disk heater is on: Red color (Blinking).	

Ref	Component	Description	See Also
2		Battery charging indicator.	P. 3-2
		Battery full: Glows green.	
		Battery charging: Glows amber.	
		Battery low: Red (Blinking).	
		AC indicator.	P. 1-4 P. 3-2
		Glows green when the computer is connected to AC power.	
3	<b>Power Button</b>	Turns your computer ON or OFF.	P. 1-5
4	<b>Keyboard</b>	Serves as the data input device of the computer.	P. 2-3
5	<b>Fingerprint Scanner</b>	Contains the fingerprint scanner.	P. B-1
6	<b>Device Indicators</b>      	Show the current status of the computer's devices.	
		Touchpad indicator –Glows green (or red) when the touchpad is enabled press Fn+F2 to toggle the touchpad on/off. (or disabled).	P. 2-8
		Num Lock indicator.	P. 2-3
		Caps Lock indicator.	P. 2-3
7	<b>Light Sensor</b>	Detects ambient light and automatically turns on/off the keyboard backlight function. Hot keys: Fn+F1.	P. 2-3 P. 2-5
8	<b>Touchpad / Touchpad Buttons</b>	Serves as the pointing device of the computer.	P. 2-8

# Where to Go from Here

As your computer is ready for operation, you may want to do any of the following now:

For this purpose...	Do this...
To know more about the computer...	Go on to the next chapter.
To install the operating system if your dealer has not already done so...	See the operating system manual.
To know more about the operating system...	Read the operating system manual.
To install the drivers if your dealer has not already done so...	See Chapter 6.
To set a power-on password...	See "Security Settings" in Chapter 5.
To charge the battery pack for the first time...	See "Charging the Battery Pack" in Chapter 3.

# ***Operating Your Computer***

This chapter provides information about the use of the computer.

If you are new to computers, reading this chapter will help you learn your computer's basic operations. If you are already a computer user but are new to notebook computers, you may choose to read only the parts containing information unique to your computer.

This chapter describes the following components:

- Keyboard
- Touchpad
- Touchscreen
- Hard disk drive
- Optical disk drive

And these features:

- Starting and shutting down the computer
- Video features
- Audio features
- Communication features

# Starting and Shutting Down the Computer

There are a number of ways to start up and shut down the computer.

## Starting the Computer

You always start the computer using the power button.

A computer starts up with an operating system (OS) existing on the storage device such as the hard disk; or from a CD if you have the respective modules installed. The computer will automatically load the OS after you turn it on. This process is called booting.

### NOTE:

An operating system is the platform for all your software application programs to run on. The most widely used operating system today is Microsoft Windows.



### CAUTION:

Do not use a sharp object such as a ballpoint pen or pencil to operate the power button. Doing so may damage the power button surface.

## Shutting Down the Computer

**When you finish a working session, you can shut down the computer by turning off the power or leaving the computer in a standby/sleep or hibernation mode:**

To shut down in this mode...	Do this...	To start up or resume again
Off	Follow the shutdown procedure of your operating system. This can prevent loss of unsaved data or damage to your software programs. If the system locks up because of hardware or software problems, press the power button to turn off the computer.	Press the power button.
Standby/Sleep	Depending on your Windows settings, you can place the computer in standby/sleep mode by: <ul style="list-style-type: none"><li>· Closing the display cover</li><li>· Pressing the power button</li></ul>	Press any key.
Hibernation	Depending on your Windows settings, you can place the computer in Hibernation mode by: <ul style="list-style-type: none"><li>· Closing the display cover</li><li>· Pressing the power button</li></ul>	Press the power button.

**NOTE:**

1. Placing your computer in standby/sleep mode allows you to return to the tasks you were doing the next time you start up the computer. (See “Power Management” in Chapter 3 for more information.)
2. Pressing the power button for 4 seconds or longer shuts the computer off. Pressing and holding down the power button for 10 seconds or more once the computer is turned off causes the internal controller to reset.

**CAUTION:**

Using the power button to shut down the computer can cause damage to the operating system when shutting down.

## Using the Keyboard

Your keyboard has all the standard functions of a full-sized computer keyboard with an additional **Fn** key for specific functions.

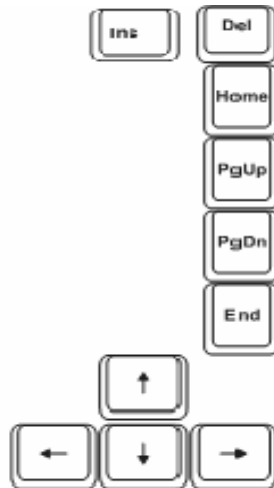
The standard functions of the keyboard are divided into four major categories:

- Typewriter keys
- Cursor-control keys
- Numeric keys
- Function keys

## Typewriter Keys

Typewriter keys are similar to the keys on a typewriter. Several keys that are not found on the typewriter, such as the Ctrl, Alt, Esc, and lock keys, are added for special purposes. When the lock keys (Caps Lock, Num Lk, and Scroll Lk) are pressed, their corresponding indicators will light up.

## Cursor-Control Keys



### NOTE:

1. The word “cursor” refers to the indicator on the screen that lets you know exactly where on your screen anything you type will appear.
2. It can take the form of a vertical or horizontal line, a block, or one of many other shapes.

## Numeric Keypad

A 15-key numeric keypad is embedded on the typewriter keys as shown next:



Numeric keys facilitate the entering of numbers and calculations. When **Num Lock** is turned on, the numeric keys are activated; meaning you can use these keys to enter numerals.

### NOTE:

1. When the numeric keypad is activated and you need to type the English letter in the keypad area, you can turn **Num Lock** off or you can press **Fn** and then the letter without turning **Num Lock** off.
2. Some software may not be able to use the numeric keypad on the computer. If so, use the numeric keypad on an external keyboard instead.





## Euro Symbol


For the Euro dollar sign €:


On an UK keyboard, hold down the **Alt Gr** key and press 4 (which has a Euro sign on it).

## Windows Keys

The keyboard has two keys that perform Windows-specific functions:

 Windows Logo key and  Application key.

The  Windows Logo key opens the Start menu and performs software-specific functions when used in combination with other keys.

The  Application key has the same effect as a right mouse click. (See your Windows manual for more information.)

## Function Keys

On the top row of the keyboard are the function keys: **F1** to **F12**. Function keys are multi-purpose keys that perform operations defined by the individual programs.













## Fn Key

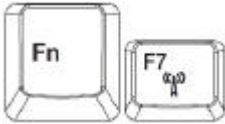
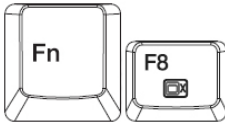
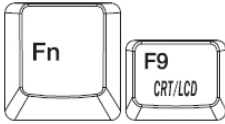
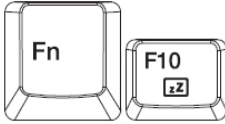
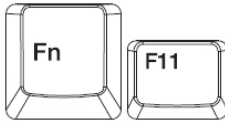
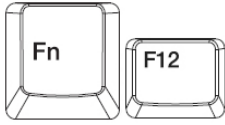
The **Fn** key, located at the lower left corner of the keyboard, is used with another key to perform the alternative function of a key. The letter “**Fn**” and the alternative functions are identified by the blue colored labels on the key top. To perform a desired function, first press and hold **Fn**, then press the other key.

## Hot Keys

Hot keys refer to a combination of keys that you can press at any time to activate special functions of the computer. Most hot keys operate in a cyclic way. Each time a hot key combination is pressed, it shifts the corresponding function to the other or next choice.

You can easily identify the hot keys by the icons imprinted on the key top. Refer to the table below to understand the functions of the hot keys:

Key	Description
 	Enables/Disables the keyboard backlight function.
 	Enables/Disables the Touchpad.
 	Decreases the sound volume.
 	Increases the sound volume.
 	1. <b>Fn+F5</b> : Decreases the LCD brightness. 2. <b>Fn+F6</b> : Increases the LCD brightness. 3. There are 64 levels of LCD brightness. (0 is no backlight)
 	

Key	Description
	<b>Fn+F7</b> hotkey turns on/off all wireless devices. i.e., WLAN, WWAN, GPS and Bluetooth.
	Switches the LCD off and on.
 <div data-bbox="549 757 1161 896"> <p>Switches the display output when an external device is connected.</p> <pre> graph LR     LCD --&gt; LCD_CRT[LCD &amp; CRT]     LCD_CRT --&gt; CRT     CRT --&gt; LCD </pre> </div>	Switches the display output when an external device is connected.
	Serves as the sleep button that you can define with Windows' Power Management. (See "Power Management" in Chapter 3.)
	Switches the LCD backlight on and off.
	Switches the Optional GPS Receiver on and off.

# Using the Touchpad



## CAUTION:

Do not use a sharp object such as a pen on the touchpad. Doing so may damage the touchpad surface as well as the RUBBER part of the touchpad.

## NOTE:

1. By default, the touchpad is enabled. Use the **Fn+F2** hot key to enable/disable this function. The touchpad indicator found on the keyboard panel glows red when it is disabled.
2. For optimal performance of the touchpad, keep your fingers and the pads clean and dry. When tapping on the pad, tap lightly. Do not use excessive force.

The touchpad is a pointing device that allows you to communicate with the computer by controlling the location of the pointer on the screen and making selections with the buttons.



The touchpad consists of a rectangular pad and four buttons. To use the touchpad, place your forefinger or thumb on the pad. The rectangular pad acts like a miniature duplicate of your display. As you slide your fingertip across the pad, the cursor on the screen moves accordingly. When your finger reaches the edge of the pad, simply lift your finger and place it on the other side of the touchpad.

Here are some common terms that you should know when using the touchpad:

Term	Action
Point	Move your finger on the pad until the cursor points to the selection on the screen.
Click	Press and release the left button. —or— Tap gently anywhere on the pad.
Double-click	Press and release the left button twice in quick succession. —or— Tap twice on the pad rapidly.

Term	Action
Drag and drop	<p>Press and hold the left button. Then, move the object by dragging your finger until you reach the new location (drag). Finally, release the left button (drop) when you have finished dragging your selection to the destination. The item will drop into the new location.</p> <p>–or–</p> <p>Gently tap twice on the pad and on the second tap, keep your finger in contact with the pad. Then, move your finger across the pad to drag the selected object to the desired location. When you lift your finger from the pad, the selected object will drop into place.</p>
Scroll	<p>To scroll is to move up and down or left and right in the working area on the screen.</p> <p>The scroll button, located between the two side buttons under the touchpad, can be used to move vertically in a convenient way. Press the upper part of the scroll button to move up and the lower part of the scroll button to move down.</p> <p>–or–</p> <p>To move vertically, place your finger on the right edge of the pad and slide your finger up and down along the edge. To move horizontally, place your finger on the bottom edge of the pad and slide your finger left and right.</p> <p>This function works only after you install the touchpad driver supplied with the computer and it may not work for all applications.</p>

**NOTE:**

If you swap the left and right buttons, “tapping” on the touchpad as an alternative method of pressing the left button will no longer be valid.

## Configuring the Touchpad

You may want to configure the touchpad to suit your needs. For example, if you are a left-handed user, you can swap the two buttons so that you can use the right button as the left button and vice versa. You can also change the size of the on-screen cursor, the speed of the cursor, and so on.

**NOTE:**

1. The touchpad is pressure sensitive.
2. The presence of a foreign object on the touchpad may cause the cursor to move erratically.
3. Use an optical cleaning kit such as a brush to remove any foreign objects.

# Using the Touchscreen



## CAUTION:

Do not use a sharp object such as a ballpoint pen or pencil on the touchscreen. Doing so may damage the touchscreen surface.

## NOTE:

1. The touchscreen is pressure sensitive. The presence of any foreign object on the touchscreen may cause the cursor to move erratically.
2. Use an optical cleaning kit such as a brush to remove any foreign objects.

The touchscreen is a touch-sensitive device that allows you to communicate with the computer by controlling the location of the pointer on the screen and making a selection.

The touchscreen allows you to use the computer without a mouse or touchpad.

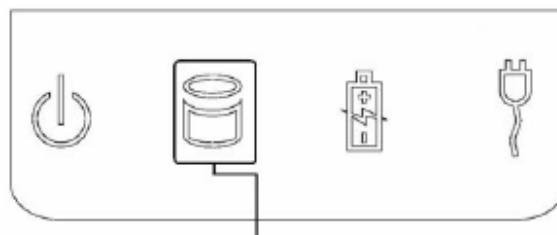
Here are some common terms that you should know when using the touchscreen:

Term	Action
Click/Point	Tap gently on the touchscreen.
Double-click	Tap twice on the touchscreen rapidly.
Drag and drop	Press lightly on the touchscreen and move your object by dragging your finger until you reach the new location (drag). Finally, release your finger (drop) when you finish dragging your selection to the destination. The object will drop into the new location.

## Using the Hard Disk Drive

Your computer normally comes with a 2.5-inch Serial-ATA hard disk drive. A hard disk drive is a storage device where your operating system and application programs are stored.

This type of drive embodies the latest in fast, reliable mass storage by integrating all the control circuitry necessary for operation directly onto the drive itself. This allows the drive manufacturer to optimize the performance of the drive.



**Indicates HDD Heater on or  
HDD in use**

The system comes with a built-in heater that automatically turns on during low temperature operation. The HDD-heater-on indicator blinks red when the heater is on. In low temperature environments, you should operate the system using AC power to conserve battery power.



### **CAUTION:**

1. Make regular backups of your data files from the hard disk drive to CDs or other storage media.
2. Never try to remove or install the hard disk drive while the computer is powered ON. Doing so can result in loss of data, and can damage the computer and the hard disk drive's sensitive circuitry.
3. Never turn off or reset the computer while the hard disk drive in-use indicator is on.

# Using the Optical Disk Drive

Your computer, depending on your model, comes optionally with an optical disk drive located on the right side of the computer in the Configurable Media Bay.

Depending on the model of your computer, the drive may be one of the following:

- **DVD drive** – reads DVD (Digital Versatile Disk) disks in addition to CDs, audio CDs, CD-R, and CD-RW disks.
- **CD-RW/DVD Combo drive** – works both as a DVD drive and CD-RW drive.
- **DVD-RW Dual drive** – aside from working as a Combo drive, it can also write to DVD±RW (+R DL), DVD-R, DVD+R, DVD-RAM, CD-R & CDRW disks.

## NOTE:

If you are using the optical disk drive for more than half an hour (e.g. playing a DVD title), it is recommended to use the AC power source instead of the battery. Otherwise, the battery may run out of power before you can complete your multimedia task.



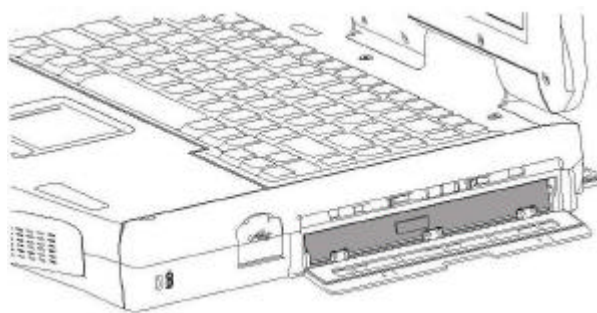
## CAUTION:

1. When inserting a disk, do not use force.
2. Ensure the disk is correctly inserted into the tray before closing the tray.
3. Do not leave the optical disk tray open unnecessarily. Also, avoid touching the lens in the tray with your hand. If the lens becomes dirty, the drive may malfunction.
4. Do not wipe the lens using materials with rough surfaces (such as paper towels). Instead, use a cotton swab to wipe the lens gently.
5. FDA regulations require the following statement for all laser-based devices. Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure. The optical disk drive is classified as a Class 1 laser product. This label is located on the optical disk drive.

**CLASS 1 LASER PRODUCT**  
**LASER KLASSE 1**

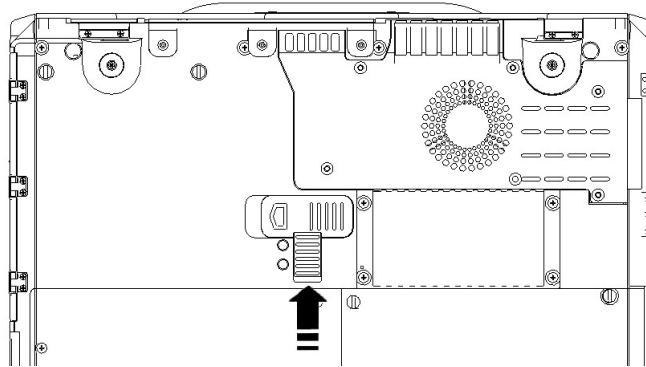
## Installing the Optical Disk Drive/2<sup>nd</sup> HDD/2<sup>nd</sup> Battery:

1. Insert the optical disk drive/2<sup>nd</sup> HDD/2<sup>nd</sup> Battery into the Configurable Media Bay located on the right side of the computer.

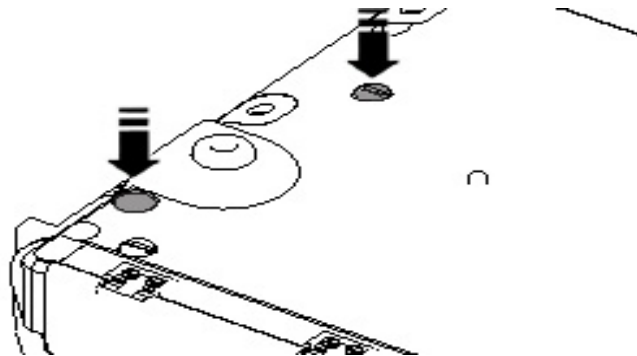




2. Slide the multipurpose bay lock/unlock switch to the lock position to secure the optical disk drive/2<sup>nd</sup> HDD/2<sup>nd</sup> Battery in place.



3. Tighten the positioning screws to lock the optical disk drive/2<sup>nd</sup> HDD/2<sup>nd</sup> Battery in place.



**CAUTION:**

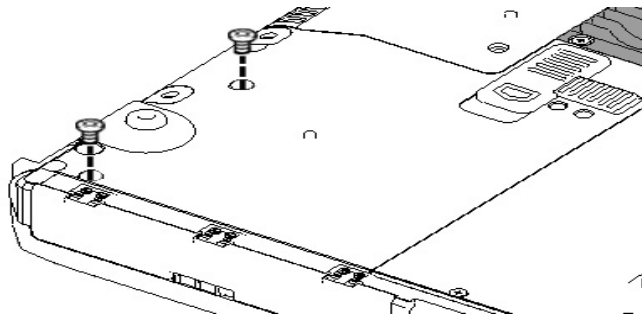
Customers utilizing the secondary battery as the only power source to operate their ML910 RUGGED NOTEBOOK will not receive a battery discharge cutoff warning during use in extreme temperatures (above 50°C and below -10°C). It is suggested that customers not rely solely on the secondary battery while operating near these extremes.

## Removing the Optical Disk Drive/2<sup>nd</sup> HDD/2<sup>nd</sup> Battery

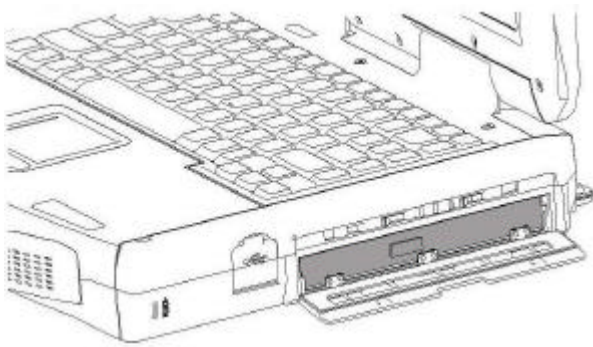
**NOTE:**

Due to the depth of the Configurable Media Bay, the user may find it helpful to first open the Optical Disk Drive tray in order to easily grasp and remove the Optical Disk Drive. Before shutting down the notebook, use the eject button on the face plate of the drive. Open the tray and then shut down the notebook. Continue with the removal process. If the power is already off on the notebook, a paper clip can be inserted into the small hole on the Optical Disk Drive face plate in order to open the tray. This is explained in the Inserting and Removing a Disk section of this chapter.

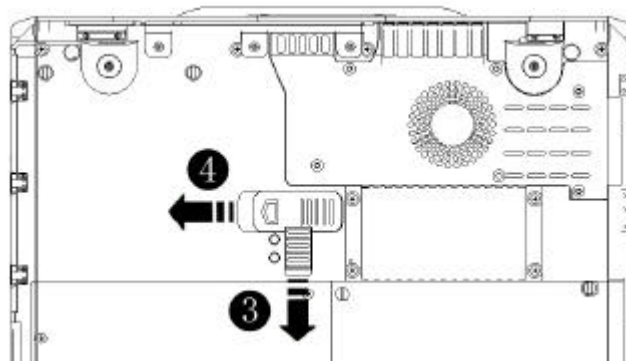
1. Remove the two positioning screws from the base.



2. Open the door of the Configurable Media Bay on the right side of the computer.



3. Push to release the lock/unlock switch.



4. Push the Eject icon switch to remove the optical disk drive/2<sup>nd</sup> HDD/2<sup>nd</sup> Battery .

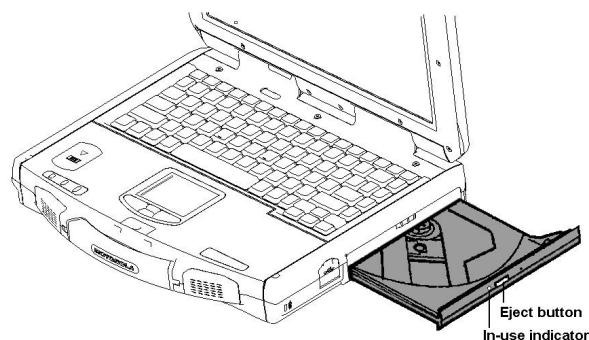
**Warning:**

1. Without the two positioning screws locked on the base, the unit will no longer be waterproof and will be more susceptible to damage if dropped.
2. The optical disk drive (or any other secondary kit i.e. 2<sup>nd</sup> HDD/2<sup>nd</sup> Battery) needs to be replaced back in the unit for positioning screws to lock on.

## Inserting and Removing a Disk

Follow this procedure to insert or remove a disk.

1. Turn on the computer.
2. Press the eject button and the optical disk drive tray will slide out partially. Carefully pull it out until fully extended.
3. To insert a disk, place the disk in the empty tray with its label facing up. Gently press the center of the disk until it clicks into place.



To remove a disk, hold the disk by its outer edge and lift it up from the tray.

4. Gently push the tray back into the drive.

**NOTE:**

In the unlikely event that you are unable to release the optical disk drive tray by pressing the eject button, you can manually release the optical media. (See “Optical Disk Drive Problems” in Chapter 8.)

## Using the Video Features

The video subsystem of your computer features:

### 13.3-inch Display:

- 13.3-inch TFT (Thin-Film Transistor) color LCD display with 1280×800 WXGA (Wide Extended Graphics Array) resolution.
- 128 MB discrete video memory.
- Simultaneous display on LCD and external monitor, which is useful when you have a presentation, as you can control the screen from your computer and face the audience at the same time.
- Dual view capability that allows you to extend your desktop to another display device so you have more desktop space to work on.
- Power Management.
- Polarizer touchscreen function.

**NOTE:**

System enters standby/sleep mode when the LCD is closed. If you want to use the computer with the LCD closed, set “Do Nothing” to the “When I close the lid of my portable computer” option in the Power Options Properties. Thus, the computer will not enter standby/sleep mode when the LCD is closed.

## Configuring the Display Modes

Your computer has been set to a default resolution and number of colors before shipment. You can view and change display settings through your operating system. See your operating system documentation or online help for specific information.

For displaying in higher resolutions, you can connect an external monitor that supports higher resolutions. (See “Connecting an External Monitor” in Chapter 4 for more information.)

The following table lists the display modes supported by your computer.

Display Mode		LCD Only	CRT Only	Simultaneous Displays
Resolution	Colors			
800×600	16-bit	✓	✓	✓
	32-bit	✓	✓	✓
1024×600	16-bit	✓	✓	✓
	32-bit	✓	✓	✓
1024×768	16-bit	✓	✓	✓
	32-bit	✓	✓	✓
1280×720	16-bit	✓	✓	✓
	32-bit	✓	✓	✓
1280×768	16-bit	✓	✓	✓
	32-bit	✓	✓	✓
1280×800	16-bit	✓	✓	✓
	32-bit	✓	✓	✓

**NOTE:**

1. 16-bit = High Color or 65,536 (64 K) colors; 32-bit = True Color 16,770,000 (16 M) colors.
2. When using an external monitor only, the resolution depends on the resolution supported by the external monitor.

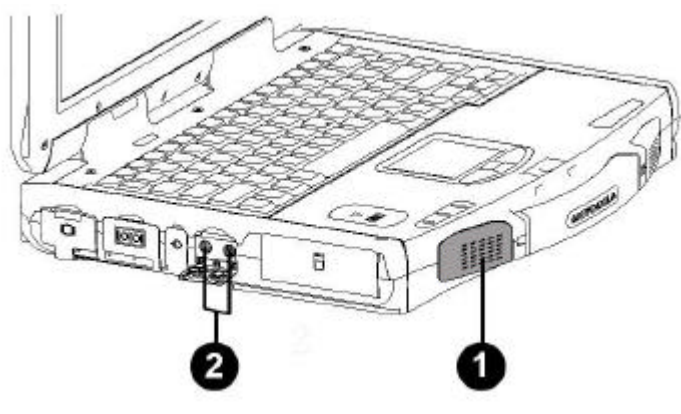
# Using the Audio Features

## NOTE:

1. To take advantage of the enhanced audio capabilities, the audio driver supplied with your computer must be installed (see Chapter 6 for details).
2. If you experience interference while recording, try lowering the microphone recording volume.

The audio subsystem of your computer features:

- Recording analog audio
- Digital audio and analog mixing functions and playing sound on your computer
- Microsoft Windows Sound System support
- A set of built-in speakers (❶)
- External audio connectors (❷)



Modes of playing and recording sound vary with the operating system used. See your operating system documentation or online help for specific information.

## Connecting Audio Devices

For higher audio quality, you can send or receive sound through external audio devices.

- **Microphone Connector** (🎤) can be connected to an external microphone for recording voice or sound.
- **Audio Output Connector** (🔊) can be connected to the line-in connector of powered speakers with built-in amplifiers, headphones, or earphone set. The audio jack also supports S/PDIF optical standard and is capable of interfacing a Mini-Toslink for optical S/PDIF.

## NOTE:

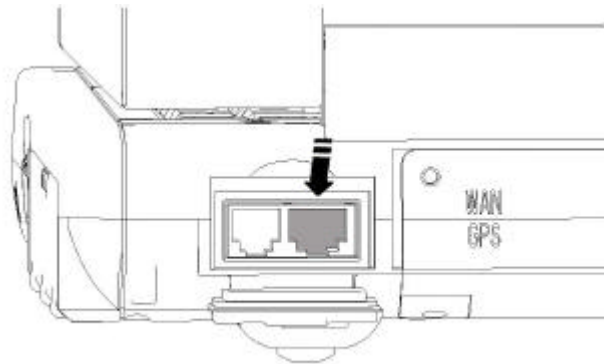
When using external speakers/headphones, the internal speakers will be disabled.

# Using the Communication Features

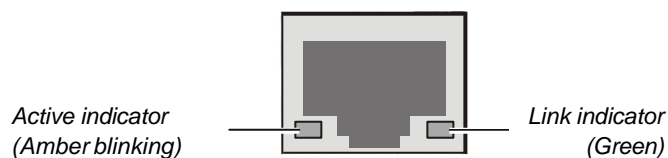
## Using the LAN

The internal 10/100/1000 Base-T Ethernet LAN (Local Area Network) module allows you to connect your computer to a network. It supports data transfer rate up to 1000 Mbps. When the ML910 RUGGED NOTEBOOK is used in a Vehicle Docking Station or Office Port Replicator the data transfer rate will be limited to 10/100 Mbps.

To connect the network cable to the LAN module, plug in one end of the LAN cable to the RJ-45 connector on the computer and the other end to the network hub.

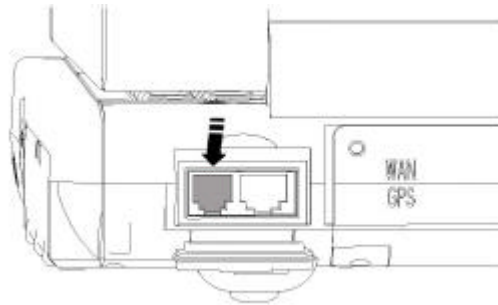


Link Indicator	Glows green when the system has a LAN connection available.
Active Indicator	Blinks amber when the system is accessing the LAN.



## Using the Wire Line Modem

The internal 56K fax/data modem allows you to use the telephone line to communicate with others by fax, email, or connect to an online service or web browser. Connect one end of the RJ-11 telephone cable to the modem port and the other end to the phone line.





## Using the Wireless LAN

Your computer may have an internal PCIe (PCI Express) Mini Card network adapter (WLAN) pre-installed by the computer manufacturer. This card allows you to access corporate networks or the Internet in a wireless environment.

Feature	Module 3945ABG for ML910 RUGGED NOTEBOOK
<b>Band</b>	Indicates the wireless band of the current connection.
<b>Supported Data Rates</b>	Rates at which the wireless adapter can send and receive data. Displays the speed in Mbps or the frequency being used. <ul style="list-style-type: none"><li>• 802.11a – 6, 9, 12, 18, 24, 36, 48 and 54Mbps</li><li>• 802.11b – 1, 2, 5.5 and 11 Mbps</li><li>• 802.11g – 6, 9, 12, 18, 24, 36, 48 and 54Mbps</li></ul>
<b>Radio Frequency</b>	<ul style="list-style-type: none"><li>• The frequency band of the current wireless connection.</li><li>- 2.4 GHz</li><li>- 5 GHz</li></ul>
<b>Channel Number</b>	Displays the transmit and receive channel.
<b>Network Authentication</b>	WPA-Personal, WPA2-Personal, WPA-Enterprise, WPA2-Enterprise.
<b>CCX Version</b>	Version of the Cisco Compatible Extensions on this wireless connection.
<b>CCX TPC</b>	Cisco Compatible Extensions Transmit Power Levels
<b>CCX Power Levels</b>	1.0, 5.0, 20.0, 31.6, 50.1 mW
<b>Access Point MAC Address</b>	The Media Access Control (MAC) address for the associated access point.
<b>Mandatory Access Point</b>	Displays None, if not enabled. If enabled, the MAC address from the access point is displayed. This option directs the wireless adapter to connect to an access point that uses a specific MAC address (48bit 12 hexadecimal digits, for example, 00:06:25:0E:9D:84).




### CAUTION:

The FAA (Federal Aviation Agency) has deemed it unsafe to operate wireless devices in aircrafts as this may interfere with flight safety. Remember to turn off wireless LAN when using your computer in an airplane.

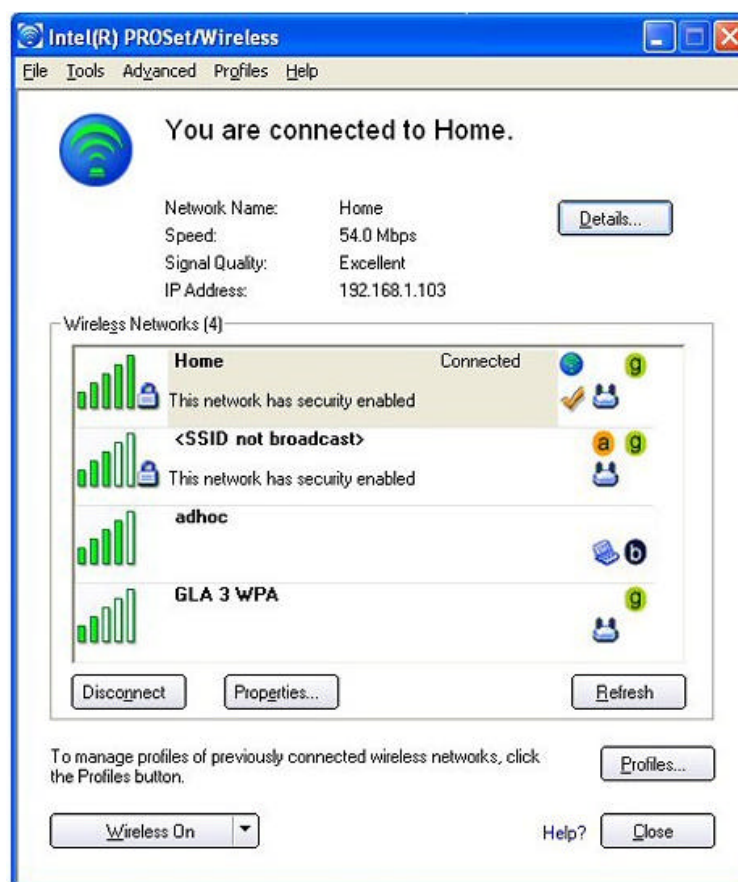
## Connecting to a Wireless Network

### For Windows XP

1. Double-click the network connectivity icon  located on the Windows system tray. The following window appears on the screen:

**NOTE:**

If the Wireless Network connection is disabled, press **Fn+F7** to enable it.



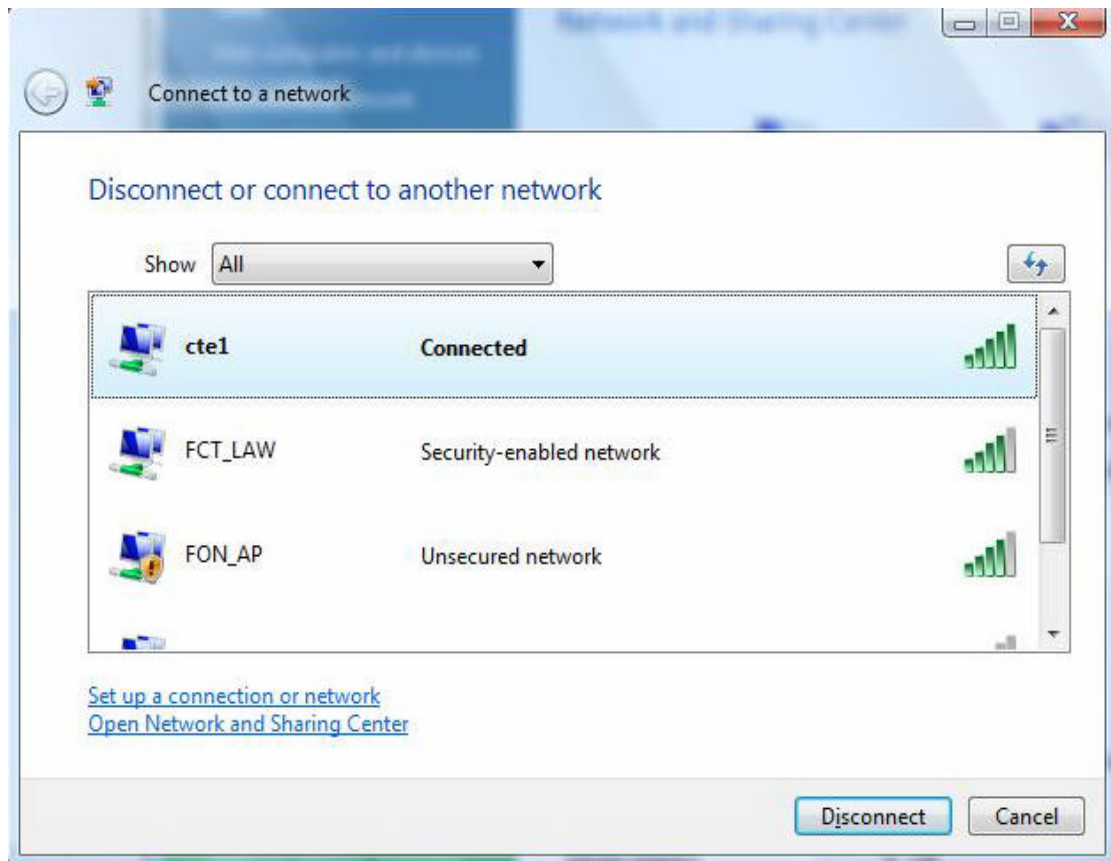
2. Select a wireless network to connect to, and then click **Connect**.
3. You may be asked to enter a key or pass phrase if a network security setting is enabled. Refer to your Windows online help for more information on setting a wireless network connection.

## For Windows Vista

1. Double-click the Wireless Software icon  located on the Windows system tray. The following window appears on screen:

**NOTE:**

If the Wireless Network connection is disabled, press **Fn+F7** to enable it.



2. Select a wireless network to connect to, and then click **Connect**.
3. You may be asked to enter a key or pass phrase if a network security setting is enabled. Refer to your Windows online help for more information on setting a wireless network connection.

## Using the PRM240 Wireless Modem (Optional)

Your ML910 RUGGED NOTEBOOK may be equipped with an embedded 800 MHz PRM 240 radio modem to provide data connectivity via a Motorola Private DataTAC communications network. This 2 Watt modem is generally compatible only with Private DataTAC systems designed to operate with portable and low power mobile devices, not those systems requiring higher power, external modems such as Motorola's VRM 850. Being embedded, the PRM 240 is protected from outside elements such as moisture, dust, sand, humidity and the long-term effects of extreme temperatures.

This ML910 RUGGED NOTEBOOK modem solution also includes an embedded antenna, typically for when the ML910 is used outside of a vehicle. An external antenna pass-through option is also available to be used in conjunction with a mobile docking station and an external antenna, to enhance radio signal coverage and range when the ML910 is used inside a vehicle.

The modem uses a serial interface to communicate with the ML910's internal controller. The protocol supported over this link is the Motorola Native Control Language (NCL). Motorola and third-party applications or middleware designed specifically to use this protocol are required, but not included with the ML910.

**NOTE:**

Please refer to your PRM240 user manual for more information on the installation and configuration of the modem.

The PRM240 modem features:

- High sensitivity reception
- Low standby current consumption
- Auto-wake up of host on incoming messages
- Roaming capabilities as used in the Private DataTAC network
- Easy to install, service and update

## Using GPS (Optional)

Navigation and positioning are crucial to many activities and yet the process has always been quite cumbersome. With GPS technology, you can now figure out where you are and where you are going.

Global Positioning System (GPS) is a worldwide radio-navigation system formed from a constellation of 24 satellites and their ground stations. GPS uses these "man-made stars" as reference points to calculate positions accurate to a matter of meters. In a sense, it is like giving every square meter on the planet a unique address.

Five broad categories of GPS application:

- Location – determining a basic position
- Navigation – getting from one location to another
- Tracking – monitoring the movement of people and things
- Mapping – creating maps of the world
- Timing – bringing precise timing to the world

### **NOTE:**

1. The basis of GPS is "triangulation" from satellites.
2. To "triangulate," a GPS receiver measures distance using the travel time of radio signals.
3. To measure travel time, GPS needs very accurate timing.
4. Along with distance, you need to know exactly where the satellites are in space.
5. Finally, you must allow for any delays the signal experiences as it travels through the atmosphere.

## Using the MESH Modem (Optional)

Motorola's MESH networking technology enables users to wirelessly access critical broadband applications seamlessly—anytime and anywhere. Whether utilizing pre-deployed infrastructure or an instant, ad hoc broadband network formed with other users, Motorola's MESH networking technology delivers real-time data to detect, prevent and respond. Key features of MESH include:

- Advanced Encryption Standard (AES) Support for WiFi Clients
- Layer 2 Multicast Support
- Network Time Protocol (NTP) Support
- Differentiated Services using IP quality of Service (QoS) Support
- Over-the-Air Software upgrade Support
- MAC Access Control lists
- Web (HTTP) based management interface
- SNMP agent for remote management
- Firmware Upgrades via TFTP

The following MESH modems are supported:

– WMC6300, WMC7300 & WDE1000

### **NOTE:**

1. Please refer to your MESH modem user manual for more information on installation and configuration of the modem.
2. Refer to Page x of this manual for external antenna placement.



### **CAUTION:**

MESH cards are EXTERNAL to the computer and when used, they are not water/humidity/dust proof since the rubber door is open.

## Using the Bluetooth

Your computer is equipped with a Bluetooth Class 2 device that is compliant with Bluetooth specification V2.0 to ensure interoperability between other electronic devices supporting Bluetooth technology. Check with the manufacturers of the respective electronic devices to determine their compatibility with your computer.

### **NOTE:**

1. There may be restrictions on using Bluetooth technology in some locations. Check with your local authorities or service provider.
2. Features using Bluetooth technology, or allowing such features to run in the background increases the demand on battery power and reduces the battery life.

Bluetooth technology enables wireless connections between electronic devices. A Bluetooth connection can be used to send files or to connect wirelessly to compatible devices such as cellular phones and PDAs using Bluetooth technology.

Since devices using Bluetooth technology communicate using radio waves, your computer and the other devices do not need to be in direct line-of-sight. Your computer and the other devices only need to be within a maximum of 10 meters of each other, although the connection can be subject to interference from obstructions such as walls or from other electronic devices.

## Embedded EVDO REV. A or HSDPA Modem (Optional)

Your ML910 RUGGED NOTEBOOK may be equipped with an embedded EVDO REV. A or HSDPA carrier modem to provide data connectivity via a cellular service provider. These internal wireless carrier modules offer the next generation of 3G EVDO and 3G HSDPA technology, respectively. The EVDO Rev A module supports seamless switching between CDMA EVDO rev Q 1X, and Rev A networks to provide broad network support. The HSDPA module is compatible with all three HSDPA/UMTS frequency bands and all four EDGE/GPRS worldwide frequency bands, providing the possibility of nearly seamless global connectivity. Embedding the carrier modem card ensures connectivity without exposing components to outside element such as moisture, dust, sand, humidity, and the long-term effects of extreme temperatures.

The ML910 RUGGED NOTEBOOK carrier modem solution also includes embedded antennas. An external antenna pass-through option is also available for rural areas with little connectivity or those with significant interference. Pass-through, in conjunction with a mobile docking station and an external antenna, allows the user maximum coverage in most environments.

Please refer to your carrier's connection service software to verify activation, connectivity and system settings. The ML910 RUGGED NOTEBOOK integrates data only cellular radio modules that use radio signals and cellular networks. It cannot be guaranteed that the notebook will be able to connect to the networks under all conditions.

# ***Managing Power***

Your computer operates either on external AC power or on internal battery power.

This chapter tells you how to manage power effectively. In order to ensure optimal battery performance, it is important to use the battery properly.

The topics in this chapter include:

- What is an AC adapter
- How to charge the battery pack
- When and how to initialize the battery pack
- How to check the battery level
- How to replace the battery pack
- What happens when the battery charge is low and what are the actions to take
- What is Power Management
- How to save power



# AC Adapter



## CAUTION:

1. The AC adapter is designed for use with your computer only. Connecting the AC adapter to another device can damage the adapter.
2. The AC power cord supplied with your computer is for use in the country where you purchased your computer. If you plan to go overseas with the computer, consult your dealer for the appropriate power cord.
3. When you disconnect the AC adapter, disconnect from the electrical outlet first and then from the computer. A reverse procedure may damage the AC adapter or computer.
4. When unplugging the connector, always hold the plug head. Never pull on the cord.

When connected to AC power, the AC adapter converts from AC (Alternating Current) to DC (Direct Current) power for use by your computer and also charges the battery pack. The AC adapter operates on any voltage in the range of 100 ~ 240 V AC.

# Battery Pack

The battery pack is an internal power source for the computer and is rechargeable using the AC adapter.

The operating time of a fully charged battery pack depends on how you use the computer. If your applications often access peripherals, you will experience a shorter operating time. In low or high temperature environments, you are recommended to operate the computer using the AC power.

## NOTE:

Care and maintenance information for the battery is provided in the “Battery Pack Guidelines” section in Chapter 7.


# Charging the Battery Pack

## NOTE:

1. Charging will not start if the battery's temperature is below 0°C (32°F) or above 45°C (113°F).
2. The thermal protection of the battery pack is 60°C (140°F) for the discharge mode. In any case, once the temperature of the battery pack reaches 60°C (140°F), the battery pack will shut off the output immediately; this means the battery will stop discharging. If this happens, the computer must be connected to external power before attempting to restart.
3. The battery will not discharge if the temperature is lower than -20°C (-4°F) or higher than 60°C (140°F).
4. During charging, it is not recommended to disconnect the AC adapter before the battery has been fully charged.
5. Accelerated battery deterioration can occur at temperatures above 60°C (140°F) and should be avoided if possible.
6. The absolute highest temperature for the battery pack is 85°C (185°F). Exposure to temperatures above this level will result in irreversible damage and permanent disabling of the pack.

**CAUTION:**

1. Batteries in ML910 RUGGED NOTEBOOK are allowed to discharge (i.e., operate normally) when the battery temperature is from  $-20^{\circ}\text{C}$  ( $-4^{\circ}\text{F}$ ) to  $60^{\circ}\text{C}$  ( $140^{\circ}\text{F}$ ) and allowed to be charged when its temperature is ranging from  $0^{\circ}\text{C}$  ( $32^{\circ}\text{F}$ ) to  $45^{\circ}\text{C}$  ( $113^{\circ}\text{F}$ ).
2. These batteries are not allowed to operate outside of this range. When the ML910 RUGGED NOTEBOOK is operating at extreme temperature and the battery is out of the operating range, an external power supplies is required to be connected to allow continued operation of the ML910 RUGGED NOTEBOOK unit.

To charge the battery pack, connect the AC adapter to the computer and an electrical outlet. The “Battery status indicator (  )” will light amber when the battery is charging, and green when the battery is fully charged. The “Battery low” indicator will blink red when battery capacity is below 10 percent.

It takes approximately 180 minutes (3 hours) to charge the battery pack when the computer is off and 240 minutes (4 hours) to fully charge the battery pack when the computer is on.

**CAUTION:**

After the battery has been fully recharged, do not immediately disconnect and reconnect the AC adapter to charge it again. Doing so may reduce the life of the battery.

**NOTE:**

1. The battery level may automatically lessen due to the self-discharge process (0.21% per day), even after the battery pack has been fully charged to 100%. This will happen whether the battery pack is installed in the computer or not.
2. The discharge will be significantly higher if the pack is stored in the computer with no external power connected.

## Initializing the Battery Pack

You need to initialize the new battery pack before using it for the first time. New battery packs are warehoused and shipped to customers only partially charged to ensure maximum life when they are placed into service. The battery charging indicator above the keyboard may blink red to indicate a low battery condition.

Initializing is the process of fully charging the new pack and may take several hours. The battery charging indicator will glow green when the pack is fully charged.

1. Make sure the computer is turned off. Connect the AC adapter to fully charge the battery pack. The AC indicator will illuminate (green) and the battery charging indicator will glow amber.
2. After the battery pack is fully charged, the charging indicator will turn to green. You may now turn on the computer.



**NOTE:**

The ML910 will recondition the battery as necessary on a scheduled basis. There is no need for the user to do this manually.

## Checking the Battery Level

### NOTE:

The battery level indication is an estimation of remaining run time. The actual operating time can be different from the estimated time, depending on how you are using the computer.

You can check the approximate battery level using the battery meter function of the operating system. To read the battery level in Windows, click the  icon on the taskbar. (Click the  icon if the computer is using AC power.)

## Replacing the Battery Pack



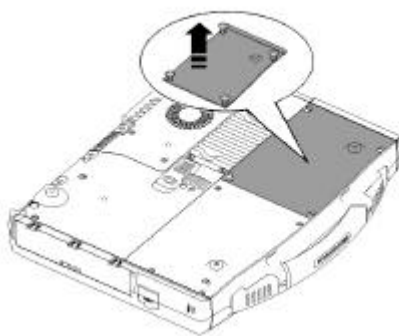
### CAUTION:

1. There is danger of damage if the battery is incorrectly replaced.
2. Replace the battery only with the computer manufacturer's optional battery packs.
3. Discard used batteries according to the dealer's instructions.
4. Do not attempt to disassemble the battery pack.

If you often rely on battery power for long periods of time while traveling, you may consider the purchase of an additional battery pack from your dealer and keep it with you in a fully charged state as a backup.


To replace the battery pack, follow these steps:

1. Make sure the computer is not on or connected to the AC power.
2. Loosen the four screws and lift the battery pack compartment cover to take it off the computer.



3. Pull on the ribbon and remove the battery pack from the computer.
4. Insert the new battery pack into the compartment. Make sure the ribbon is underneath the battery pack.
5. Replace the compartment cover and secure the four screws.

## Battery Low Signals and Actions

Battery Low occurs when the battery has approximately 10% (Windows default setting) of its charge remaining. The computer gives warning beeps or messages and the Battery Power Indicator (  ) blinks red to alert you to take actions.

### **NOTE:**

1. You can set up your threshold and signals of Battery Low under Windows.
2. Customers utilizing the secondary battery as the only power source to operate their ML910 RUGGED NOTEBOOK, will not receive a battery discharge cutoff warning during use in extreme temperatures (above 50°C and below -10°C). It is suggested that customers not rely solely on the secondary battery while operating near these extremes.

Immediately save your data upon receiving a Battery Low alert. The remaining operating time depends on how you are using the computer. If you are using the audio subsystem, hard drive or Optical disk drives, the battery may run out very quickly.

Always respond to Battery Low by placing your computer in standby/sleep mode, turning off the computer, or connecting the AC adapter.

If you do not take any action, the computer will automatically hibernate and turn off.



### **CAUTION:**

If you fail to save your data when the battery completely runs out of charge, then your unsaved data will be lost.

# Power Management

Your computer supports ACPI (Advanced Configuration and Power Interface) for power management. The power management feature allows you to reduce the power consumption for saving energy.

With an ACPI-compliant operating system such as Windows XP and Windows Vista, power supply to different computer components is controlled on an as-needed basis. This allows maximum power conservation and performance at the same time.

In general, Windows' power management works in this way:

What...	When...
Power to the hard disk is turned off	When the hard disk has been idle for a set period.
Power to the display is turned off	When the display has been idle for a set period.
The computer enters Standby mode. The hard disk and display are turned off and the entire system consumes less power.	When the entire system has been idle for a set period.
	When you press <b>Fn+F10</b> . *
	When you close the cover. *
The computer enters Hibernation mode. (See the next subsection for more information.)	When you press the power button. *
	When you press <b>Fn+F10</b> . *
	When you close the cover. *

\* depends on your Windows settings.

For detailed information on power management, see Windows' Help. Power management settings should not be completely disabled. Generally, users will not see significant benefit by setting hard drive shutdown times of longer than a few minutes. When ML910 RUGGED NOTEBOOK is intended for in-vehicle use, it is recommended that hard drive power down should be set to 1 minute to prevent premature wear-out of the hard-drive.



## CAUTION:

Do not disable power management if the laptop will be used in extreme temperatures or high vibration environments (e.g., vehicles).

## Hibernation

When you use the hibernation feature, you do not have to close the applications and documents that are running on the computer. The computer stores the state of your computer to a file on the hard disk before shutting down. The next time you turn on your computer, you return to exactly where you left off.

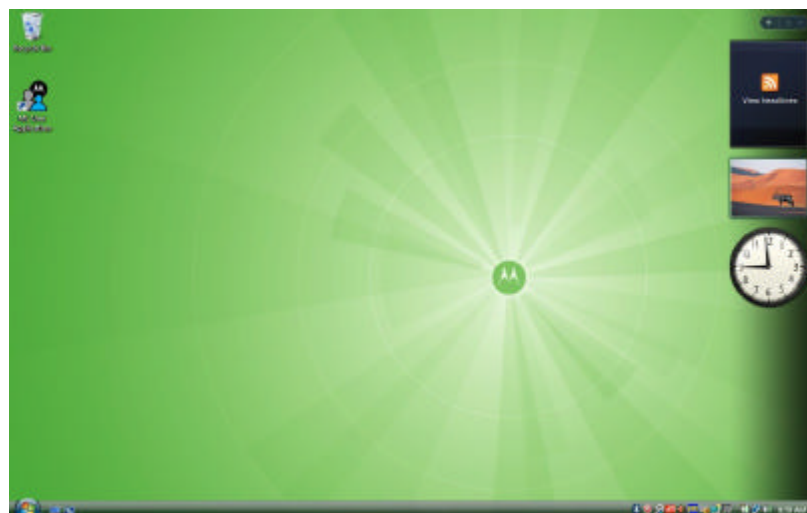
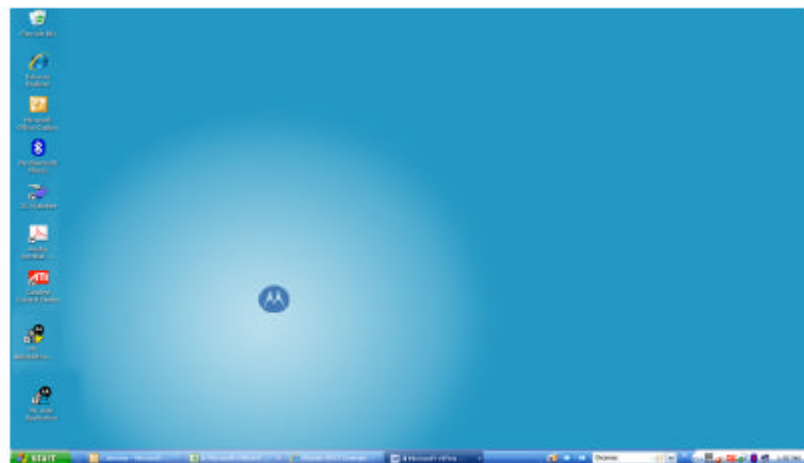
# ATI PowerPlay™ Management

PowerPlay manages the power requirements of your graphics settings for higher performance or longer battery life. Use PowerPlay™ to balance performance and power consumption.

When you bought the notebook from Motorola or Motorola's dealers, PowerPlay is the fixed default driver of the graphics card which can be adjusted under the "Enable PowerPlay procedure.

## Access to PowerPlay

1. Start notebook and click on the “ATI Catalyst Control Center” symbol.



2. You will see the following screen once you've accessed the "ATI Catalyst Control Center" program.



3. Click the "Next" key to proceed to the next step for system access.

**NOTE:**

The following will only happen the first time you access the Catalyst Control Center.



## Functions of PowerPlay

### Enabling PowerPlay

You can adjust the AC mode and battery mode to reduce the power consumption under the Enable Power Play Function.

1. From the Graphics Settings tree, click PowerPlay
2. Click Enable PowerPlay
3. You will see the following screen:



Please check the function of “Enable POWERPLAY” when you access the PowerPlay program.



## Select Your Preferred Settings Depending on Power Source

The default power settings can be changed to meet your performance to power requirements.

1. From the Graphics Setting tree, click PowerPlay.
2. Click and drag the slider next to the relevant power source to the desired setting.

## Set Low Battery Level

PowerPlay can automatically change to low power consumption settings.

**NOTE:**

This option is not available on a notebook running Windows® Vista.

1. From the Graphics Settings tree, click PowerPlay.
2. Click the up or down buttons next to Low Battery settings to a desired battery power level percentage.
3. Optionally, enter a value in the power percentage value box.

## Power-Saving Tips

In addition to your computer's automatic power management, you can do your part to maximize the battery's operating time by following these suggestions.

1. Do not disable Power Management.
2. Decrease the LCD brightness to the lowest comfortable level.
3. Disable the serial port if no device is connected to this port. (See "Advanced Settings" in Chapter 5.)
4. If you work with an application that uses the serial port or features wireless connectivity (WWAN/WLAN/PRM modem/GPS/Bluetooth), exit the application when you finish using it.
5. Turn off the computer when you are not using it.

# ***Expanding Your Computer***

You can expand the capabilities of your computer by connecting other peripheral devices. When using a device, be sure to read the instructions accompanying the device together with the relevant section in this chapter.

This chapter gives guidelines on installing and using the following devices:

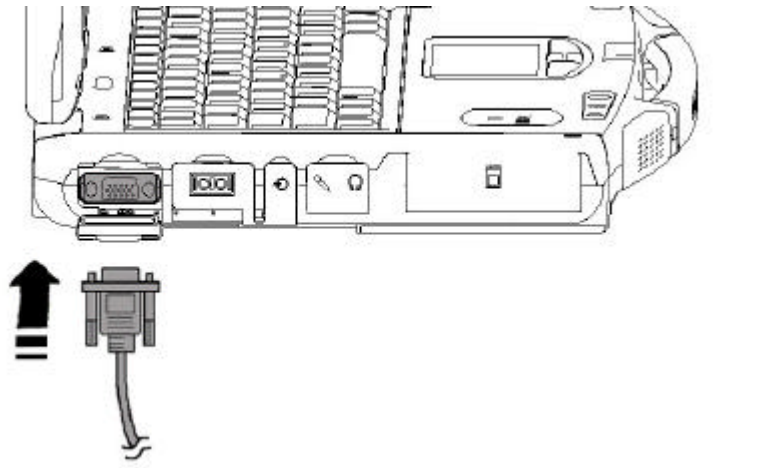
- External monitor
- USB device
- Serial device
- Video source
- System Memory Upgrade
- RF Pass-Through

# Connecting an External Monitor

If you want the benefits of a larger display screen with higher resolution, you can connect an external monitor that supports VGA interface to your computer.

Follow this procedure to connect an external monitor:

1. Make sure that the computer is not turned on.
2. Plug the monitor's signal connector to the computer's VGA port.



3. Plug one end of the monitor's power cord into the power socket on the monitor and the other end to an electrical outlet.
4. To use the monitor, switch on the monitor before turning on the computer.
5. The monitor should respond by default. If not, you can switch the display to the monitor or to both (simultaneous display), or to multi-display by pressing **Fn+F9**. In Windows, you can also change the display through the settings in Display Properties.
6. You can change display settings through your operating system. See your operating system documentation or online help for specific information.



## CAUTION:

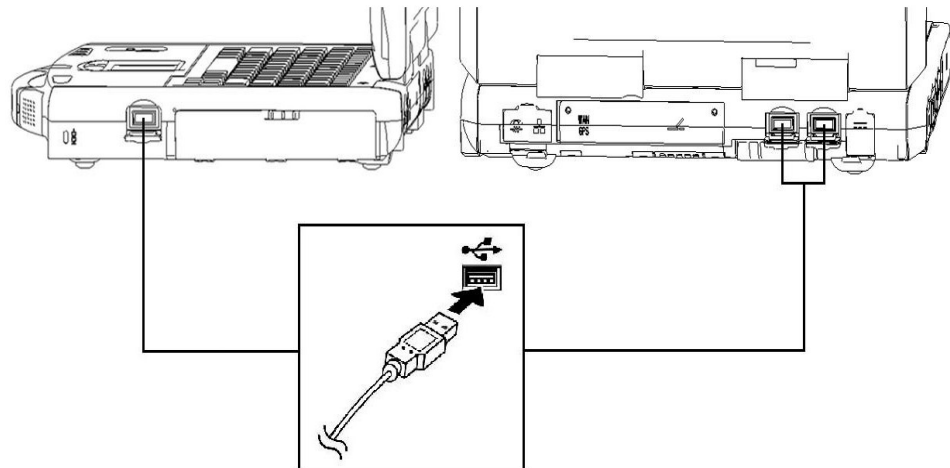
Do not disconnect the external monitor while the computer is on standby/sleep mode. If no external monitor is connected when the computer resumes, the LCD remains blank and the output is not displayed.

## Connecting a USB Device

Your computer has three USB ports that support transfer rates of up to 12 Mbps for USB 1.1 devices and 480 Mbps for USB 2.0 devices, such as digital camera, scanner, printer, modem, and mouse.

USB is specified to be an industry standard extension to the PC architecture. It supports “Plug-and-Play” technology so you can install and remove USB devices without turning off the computer. With its multiple connection capability, up to 127 devices can be connected in a daisy-chain configuration. In addition, you can use a USB hub that converts a single USB connector into multiple ports where USB devices can be connected.

To connect a USB device, simply plug the device cable into one of the **USB ports** with the USB “converging arrows” symbol facing up.

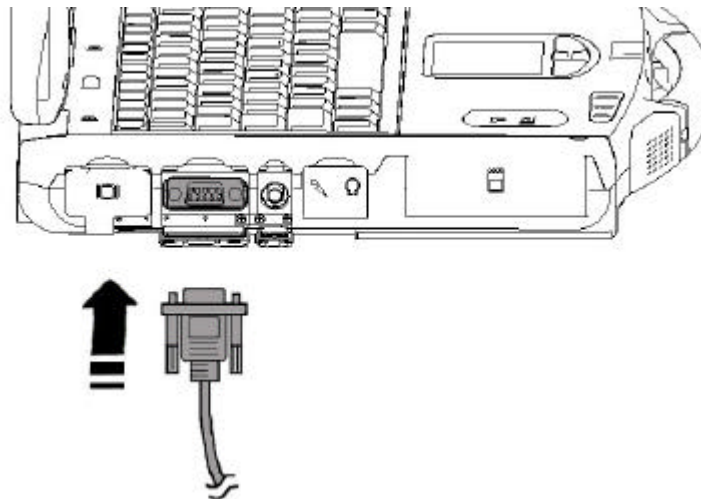


# Connecting a Serial Device

Your computer has a serial port for connecting a serial device such as an external modem.

Follow this procedure to connect a serial device:

1. Plug the device cable to the serial port on the left side of the computer.
2. Turn on the computer.



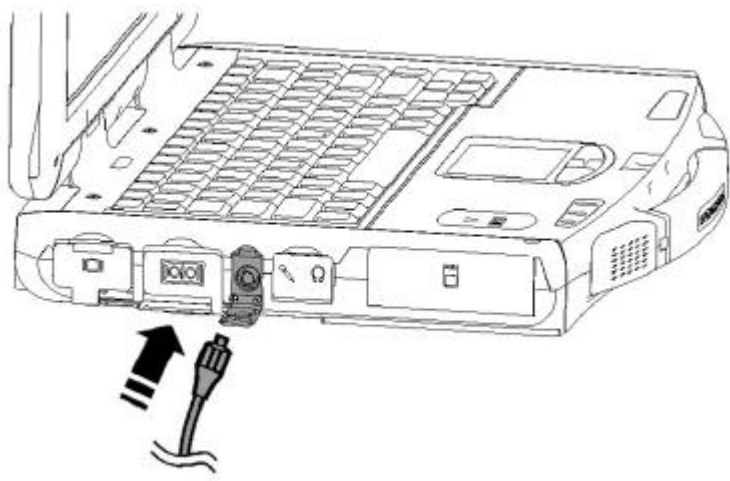
## NOTE:

Portable modems that derive power through the **serial port** cannot be used with the computer. Instead, use a modem that is powered by its own internal battery or external AC power.

## Connecting a Video Capture Device

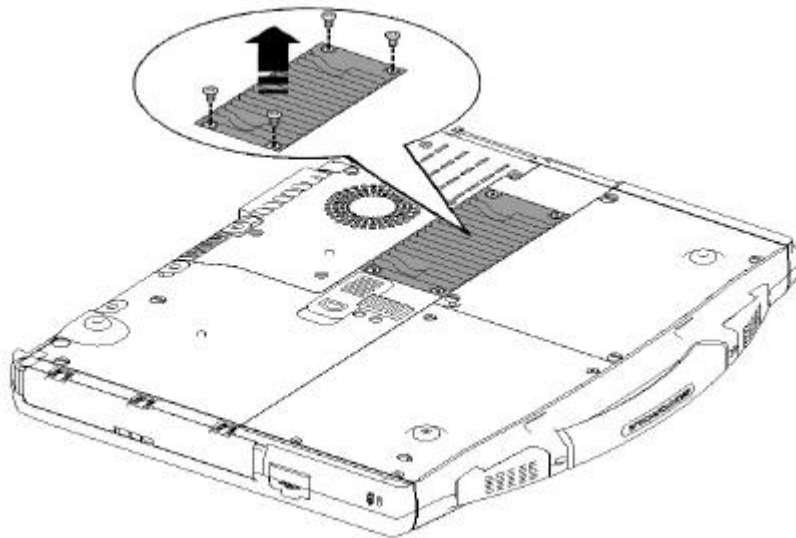
Your computer has a video capture port for connecting a video source such as high-quality CCD, as well as consumer electronic equipment such as DVCAM and VCR.

To connect a video capture device, simply plug the device cable into the video capture (CONEXANT CX23885-12ZP) port of the computer.



# System Memory Upgrade

You can upgrade your computer by changing system memory to a maximum of 2 GB on the two 200-pin DDR2 SO-DIMM slots. However, to avoid damage during the installation procedure, please ask your dealer for help.



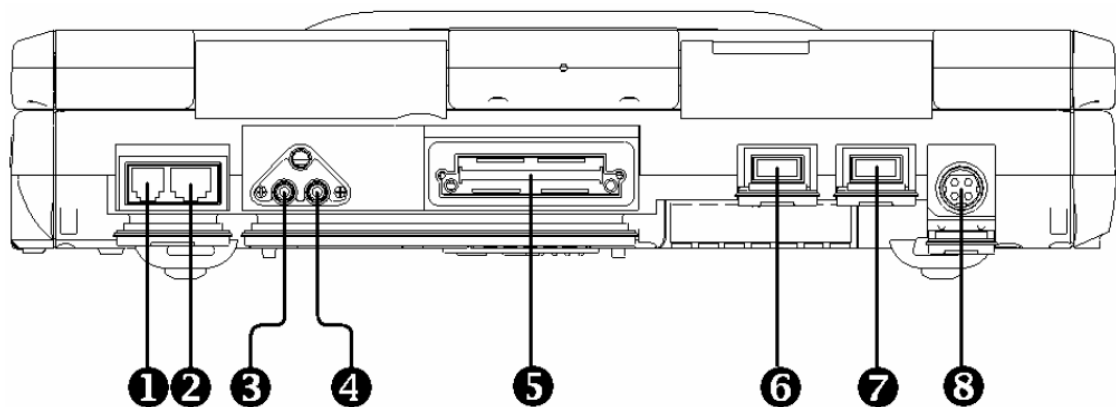


# RF Pass-Through

RF Pass-Through is a feature that enables the ML910 to receive and transmit radio signals through external antennas for better coverage or range, as compared to using its internal antennas. RF Pass-Through operation depends on having the required RF Pass-Through option and certain wireless options installed in the ML910, as well as a vehicle docking station that supports RF connectivity to the ML910. The presence of the RF Pass-Through option is noted on a label affixed to the underside of the ML910.

The wireless options that support RF Pass-Through are: embedded Wireless Wide Area Network (WWAN) modules, such as one of the public carrier modules or the Motorola Private DataTAC PRM240 Modem, and/or a GPS receiver module. Figure 1 shows the RF Pass-Through connectors (labeled as 3 and 4) which refer to the GPS Antenna Connector and WWAN Module Antenna Connector, respectively. Note that these connectors are present on all ML910 notebooks regardless of the associated options being installed.

RF Pass-Through is a standard feature on the High Tier ML910 Vehicle Docking Station, and is available on compatible ML900 Vehicle Docking Stations by installing the RF Pass-Through retrofit kit. The ML910 RF Pass-Through feature is not backward compatible with the ML900 High Tier Vehicle Docking Station's standard RF Pass-Through facility that is intended for ML900 notebooks only.



**Figure 1: Rear View of ML910**

## RF Pass-Through Retrofit Kit

The RF Pass-Through Retrofit Kit allows the user to use the ML910 RF Pass-Through on a ML900™ Vehicle Docking Station (applicable for both High-Tier and Mid-Tier Vehicle Docking Station). The RF Pass-Through Retrofit Kit is also backward compatible with the ML910 Mid-Tier Vehicle Docking Station so that the RF Pass-Through option can be added to a ML910 Mid-Tier Vehicle Docking Station.

## ML910 High-Tier Vehicle Docking Station

Dock the ML910 Rugged Laptop on the ML910 High-Tier Vehicle Docking Station. Turn ON the Power Switch on the Vehicle Docking Station. Ensure the ML910 Rugged Laptop is securely docked on the ML910 High-Tier Vehicle Docking Station. The ML910 Rugged Laptop should have the RF Pass-Through and Wireless options available in order to use the external antenna.

For ML910 High-Tier Vehicle Docking Station, the RF Pass-Through will switch automatically when the ML910 Rugged Laptop is being docked. The user does not need to make any changes in order to use the external antenna. Ensure the external antennas are attached to the Vehicle Docking Station before the ML910 Rugged Laptop is docked to the Vehicle Docking Station.

## ML910 Mid-Tier Vehicle Docking Station

The ML910 Mid-Tier Vehicle Docking Station does not provide the RF Pass-Through feature on the Vehicle Docking Station itself. The wireless capability will be discontinued when the ML910 Rugged Laptop (with RF Pass-Through and Wireless Options) is docked to the ML910 Mid-Tier Vehicle Docking Station. The ML910 Rugged Laptop internal antenna will be disabled whenever it is docked to the Vehicle Docking Station (applicable for both ML910 High-Tier and Mid-Tier Vehicle Docking Station).

If the user wishes to use the internal WWAN Module or GPS Module, an RF Pass-Through Retrofit Kit must be installed on the ML910 Mid-Tier Vehicle Docking Station. The user does not need to make any selection on MLUA to enable the RF Pass-Through after the Retrofit Kit has been installed. The ML910 Rugged Laptop will configure the RF Pass-Through automatically.

If the user wishes to use the internal antenna for the internal WWAN Module or GPS, RF Pass-Through must be disabled using the RF Pass-Through tab options in the ML User Application (MLUA) on the ML910 Rugged Laptop.

## ML900 High-Tier Vehicle Docking Station

If the ML910 Rugged Laptop is docked in a ML900 High-Tier Vehicle Docking Station. The ML910 Rugged Laptop internal antenna will remain enabled, and the external antenna will not be used.

The RF Pass-Through of the ML910 Rugged Laptop is not compatible with ML900 High-Tier Vehicle Docking Station. The user must install the RF Pass-Through Retrofit Kit to utilize the external antenna. After the installation of the RF Pass-Through Retrofit Kit, the user has to enable the RF Pass-Through option through MLUA.

## ML900 Mid-Tier Vehicle Docking Station

If the ML910 Rugged Laptop is docked in a ML900 Mid-Tier Vehicle Docking Station. The ML910 Rugged Laptop internal antenna will remain enabled and the external antenna will not be used.

The ML900 Mid-Tier Vehicle Docking Station does not provide the RF Pass-Through feature, even for ML900. The RF Pass-Through Retrofit Kit enables the user to utilize external antenna. After the installation of the RF Pass-Through Retrofit Kit, the user must enable the RF Pass-Through option through MLUA.

***\*Wireless refers only to WWAN and GPS Connection.***

## RF Pass-Through Combinations

Table below shows the combination of the different Vehicle Docking Station with ML910 Rugged Laptop.

Docking Station	Vehicle Docking Station Pass Through Option	RF Pass-Through Function	RF Pass-Through Retrofit Kit
ML910 High-Tier Vehicle Docking Station	Available	Automatic	Not Required
ML910 Mid-Tier Vehicle Docking Station	Not Available	Automatic	Required
ML900 High-Tier Vehicle Docking Station	Available Not Applicable	Manual	Required
ML900 Mid-Tier Vehicle Docking Station	Not Available	Manual	Required

**\*Remarks:**

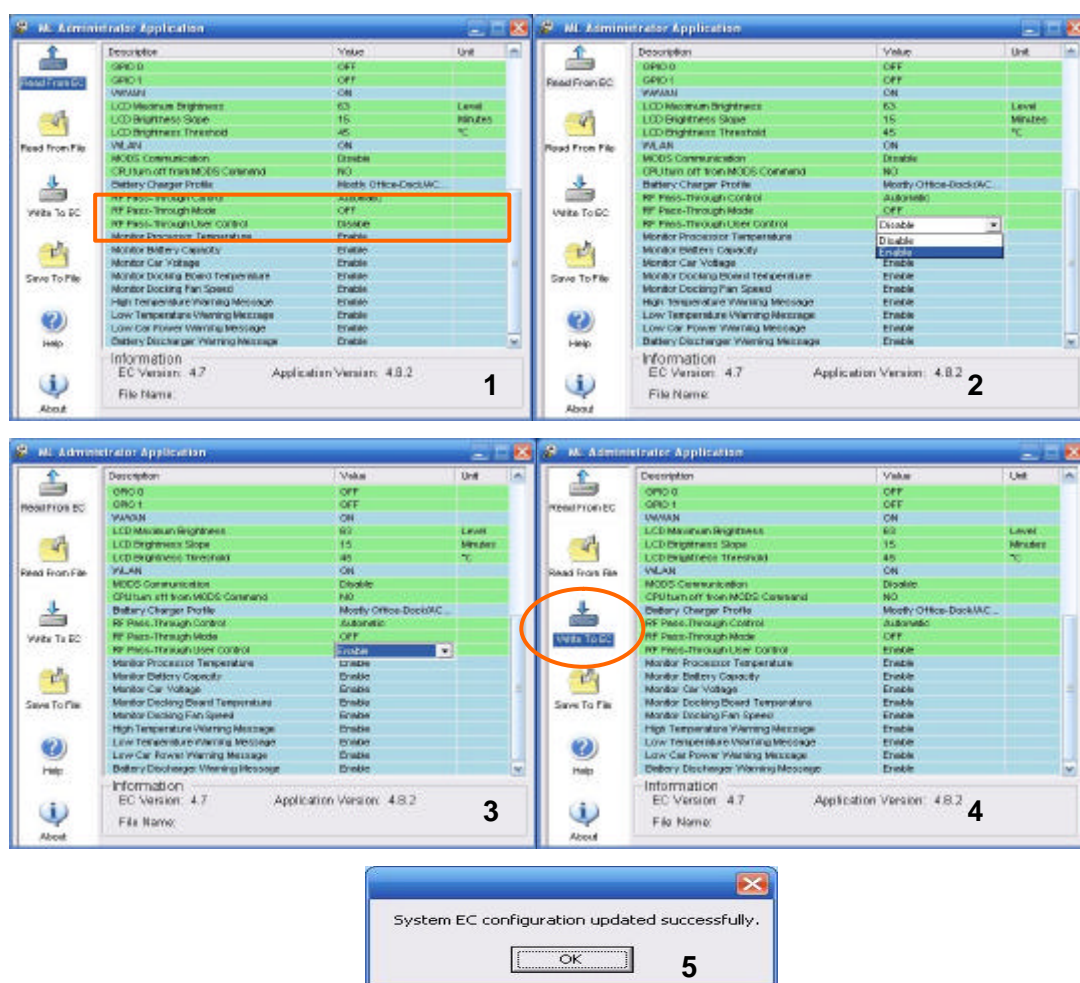
- 1) The ML910 Mid-Tier Vehicle Docking Station requires the RF Pass-Through Retrofit Kit to utilize RF Pass-Through access automatically.
- 2) The ML900 High-Tier and Mid-Tier Vehicle Docking Station require the RF Pass-Through Retrofit Kit to utilize RF Pass-Through access.
- 3) The ML900 High-Tier and Mid-Tier Vehicle Docking Station require manual selection on MLUA (with the Retrofit-Kit attached to the Vehicle Docking Station) to utilize RF Pass-Through access.

# Enabling RF Pass-Through Option in MLAA & MLUA

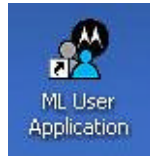
- 1) Launch the ML Administrator Application.



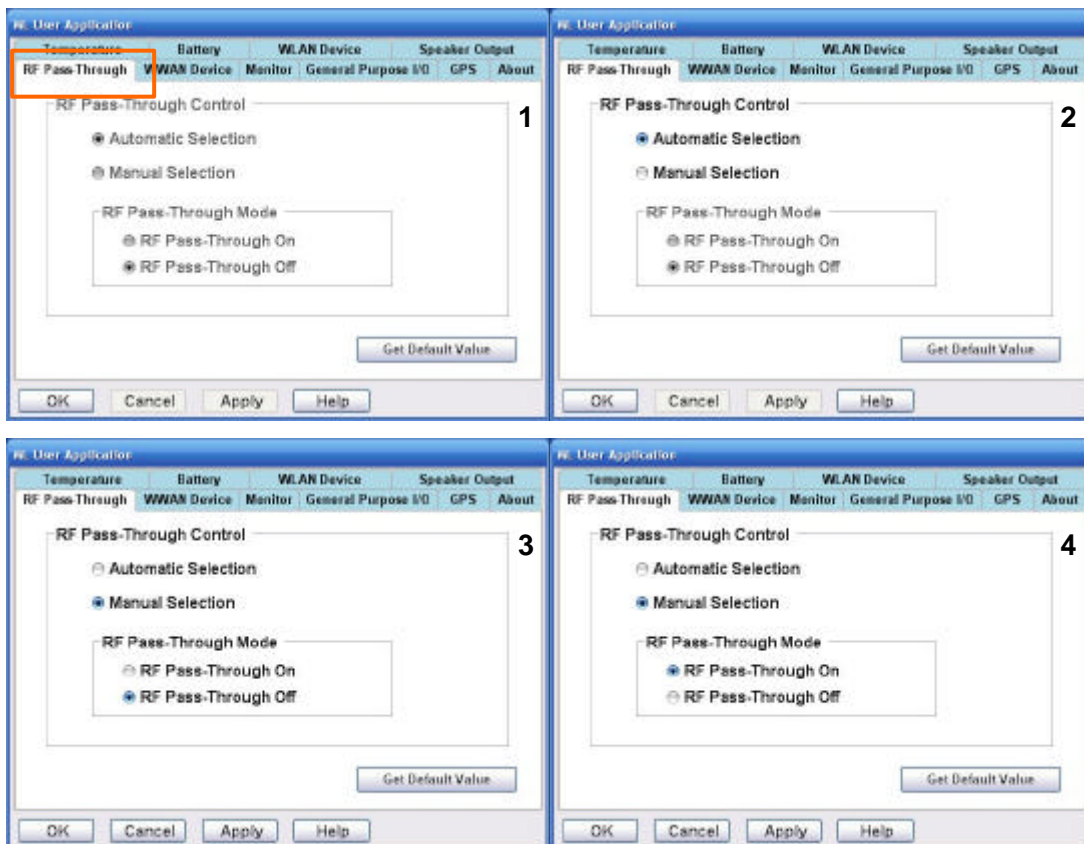
- 2) Go to the RF Pass-Through Options available in MLAA.
- 3) Change the RF Pass-Through User Control from **[Disable]** to **[Enable]**.
- 4) Select **[Write to EC]** to change the setting, a message will be shown after the setting is updated to System EC.



- 5) Launch the ML User Application.



- 6) Select the RF Pass-Through option available in the MLUA.
- 7) Before the RF Pass-Through User Control in MLAA changed to **[Enable]**, the RF Pass-Through Control will be grey-out.
- 8) After the RF Pass-Through User Control in MLAA had being **[Enable]**, the default setting will be **[Automatic Selection]**.
- 9) User can select **[Manual Selection]** to either Enable or Disable the RF Pass-Through. **[Apply]** need to be press by User in order to make the selection valid.
- 10) Enable the RF Pass-Through will be disabling the Internal Antenna and vice-versa.



- 11) Note that RF Pass-Through Option will not be applicable if certain conditions have been met. The conditions are shown as below:
  - a. The ML910 do not have RF Pass-Through installed. RF Pass-Through here is refer to RF Antenna Switching Board.
  - b. The ML910 are being docked to either ML900 or ML910 Office Port Replicator.
- 12) Internal antenna will function if User selects the **[RF Pass-Through Off]** in the RF Pass-Through Mode.
- 13) External antenna option will be available if User selects the **[RF Pass-Through On]** in the RF Pass-Through Mode.

# ***BIOS Setup Utility and ML Applications***

BIOS Setup Utility is a program for configuring the BIOS (Basic Input/Output System) settings of the computer.

BIOS is a layer of software called firmware that translates instructions from other layers of software into instructions that the computer hardware can understand. The BIOS settings are needed by your computer to identify the types of installed devices and establish special features.

The ML User Application or MLUA is designed for users to configure the parameters of various functions in the notebook. By using these configuration parameters, you can change the default configuration that automatically loads when you turn on the computer.

ML User Application is automatically launched every time you boot your notebook into Windows Operating System. This can be indicated by the ML User Application icon on the taskbar. Double-clicking on the ML User Application icon will bring up the application window.

Every time you start the ML User Application, the current configuration parameters saved in the Embedded Controller is loaded and displayed in the ML User Application window.

This chapter tells you how to use the BIOS Setup Utility and provides you with some of the basic information related to the MLUA.



# When and How to Use the BIOS Setup Utility

## When to Use

You need to run the BIOS Setup Utility when:

- You see an error message on the screen requesting you to run Setup.
- You want to restore the factory default settings.
- You want to modify some specific settings of the hardware.
- You want to modify some specific settings to optimize system performance.

## Starting BIOS Setup

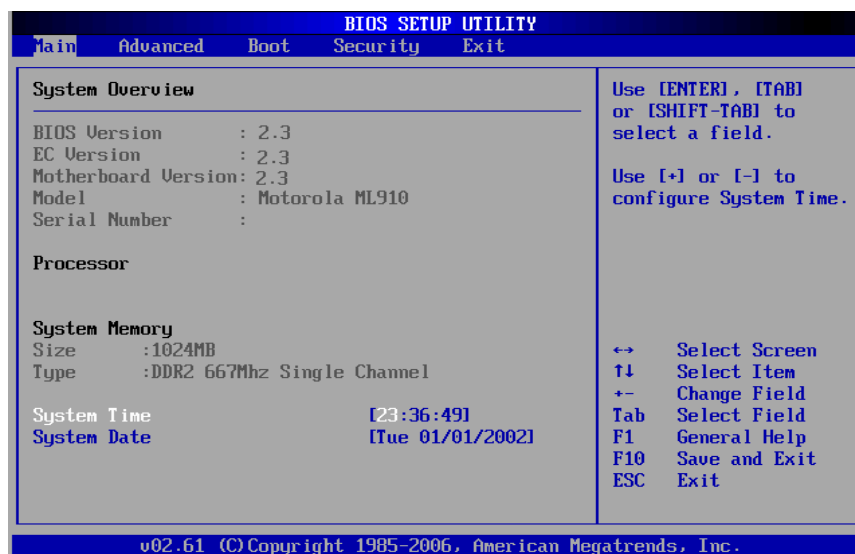
### NOTE:

1. The Setup screens shown in this chapter are for your reference only. The actual items or settings on your computer may differ.
2. The Setup utility may have been updated after the publication of this user guide.
3. The settings you select in your operating system might override similar settings in the Setup.

To run BIOS Setup, press **F2** when the prompt appears in the lower left corner of the screen during system startup. The prompt shows up on the screen for only 1 second. You must press **F2** quickly. The BIOS Setup menu appears as shown below.

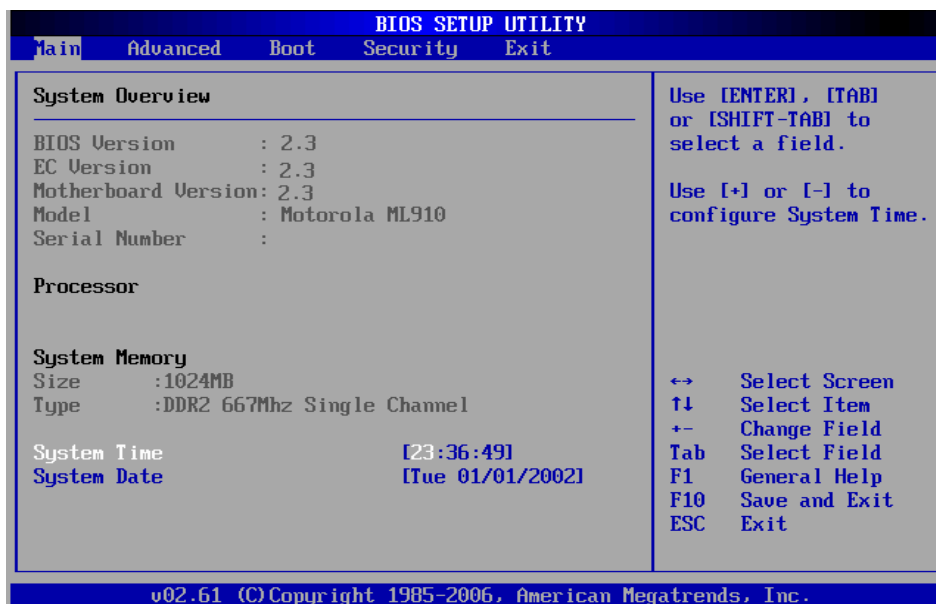
## Moving Around and Making Selections

A brief description of keyboard usage is listed next:



Key	Function
F1	General Help
F2	General Help
F9	Load optimal defaults
F10	Save and Exit
← →	Select Screen
↑↓	Select Item
	Change Field/Option
<b>Enter</b>	1) Brings up the sub-menu when available. 2) Opens or closes the options window when an item is selected.
<b>Tab</b>	Jumps from one item to another.
<b>Esc</b>	1) Exits the BIOS Setup Utility. 2) Returns to the previous menu if in a sub-menu. 3) Closes the options window if one is open.

## Main Menu



## Advanced Menu



## CPU Configuration



Setup function of "Intel SpeedStep Technology": Under the "Advanced", tab use **↑↓** keys to move cursor over the string of "Intel SpeedStep Technology" and you will find the options of "Maximum", "Minimum", "Automatic" & "Disabled" displayed on the right top corner of screen.

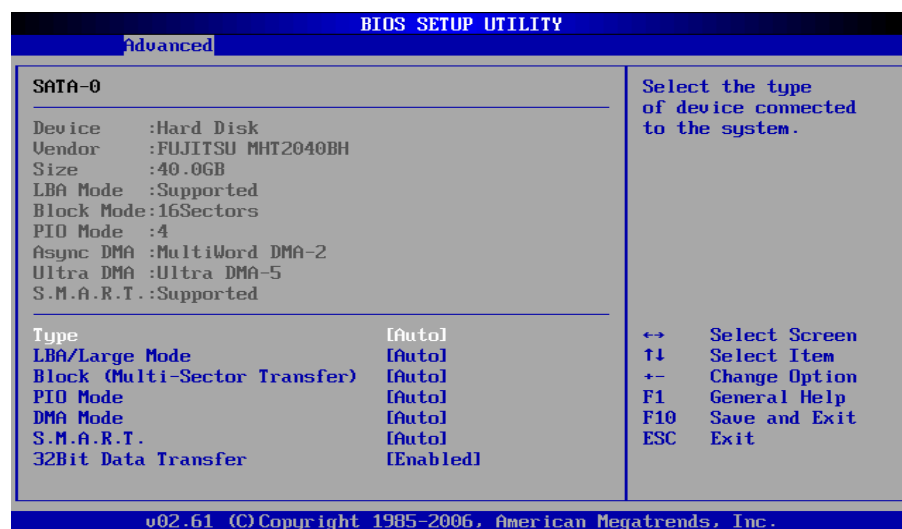
- Maximum: CPU speed is set to maximum.
- Minimum: CPU speed is set to minimum.
- Automatic: CPU speed is controlled by OS.
- Disabled: Use default CPU speed.

## Drive Configuration



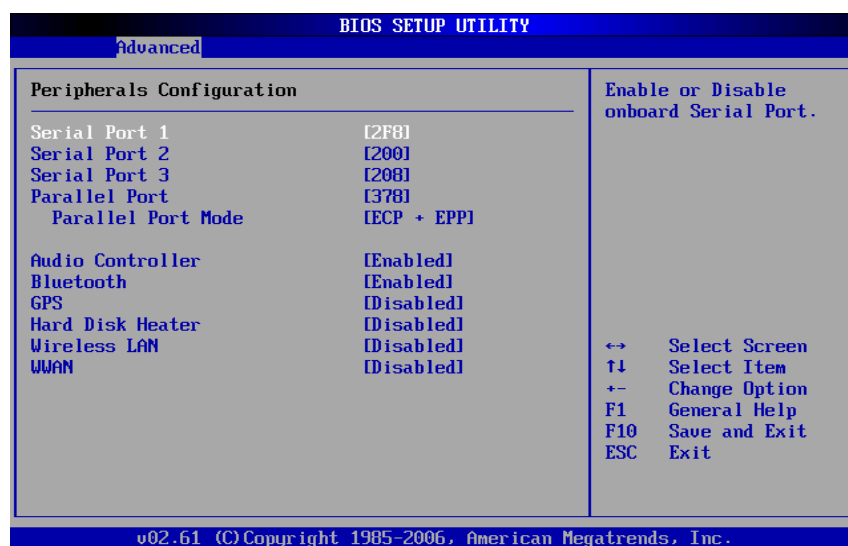
While entering setup, BIOS auto detects the presence of devices. The following screen displays the status of auto detection of devices.

## Device Information



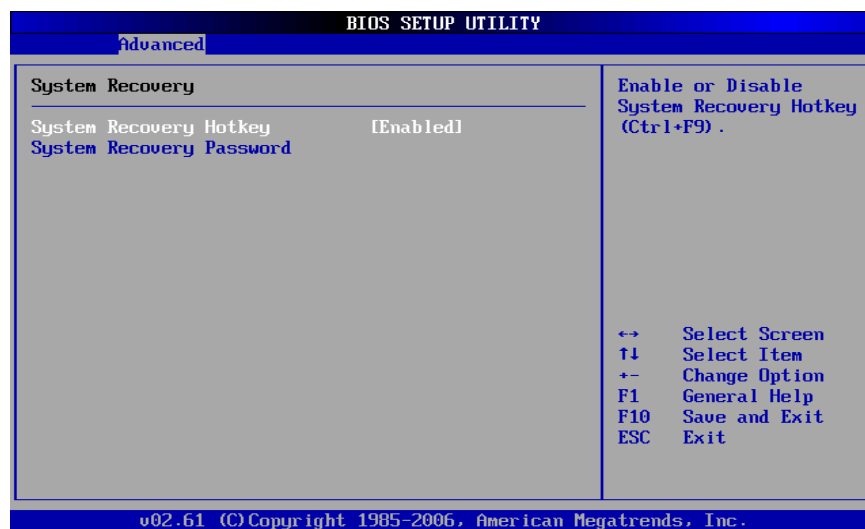
These information is detected by system automatically. It is suggested not to change it.

## Peripherals Configuration



Enables or disables the feature of "Peripherals Configuration":  
Under the "Advanced" tab, use the  $\uparrow\downarrow$  keys to move cursor over the string of peripherals and enable or disable peripherals configuration as needed.

## System Recovery



### System Recovery Hotkey:

Enable or Disable System Recovery Hotkey by (Ctrl+F9).

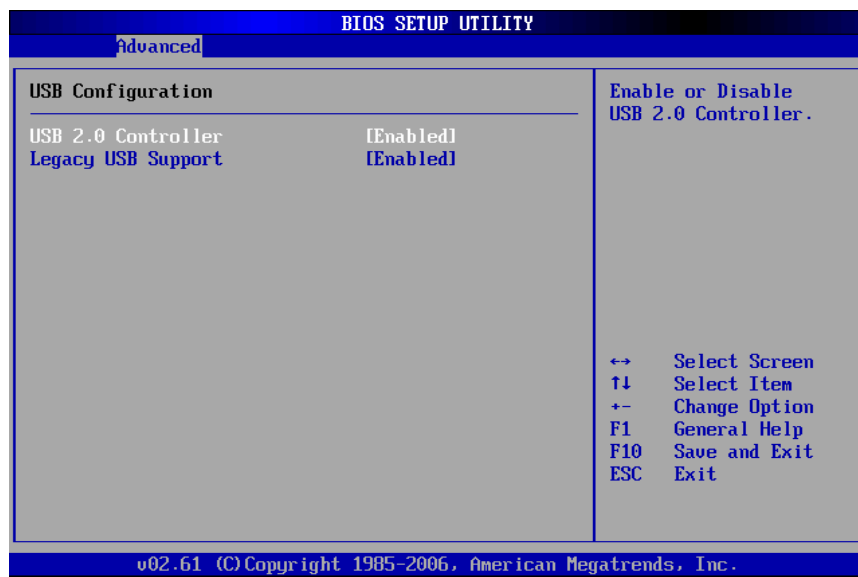
### System Recovery Password:

The BIOS supports the recovery of the HDD with a **Ctrl+F9** during POST by using one to six character password.

**Set and Change Password:**

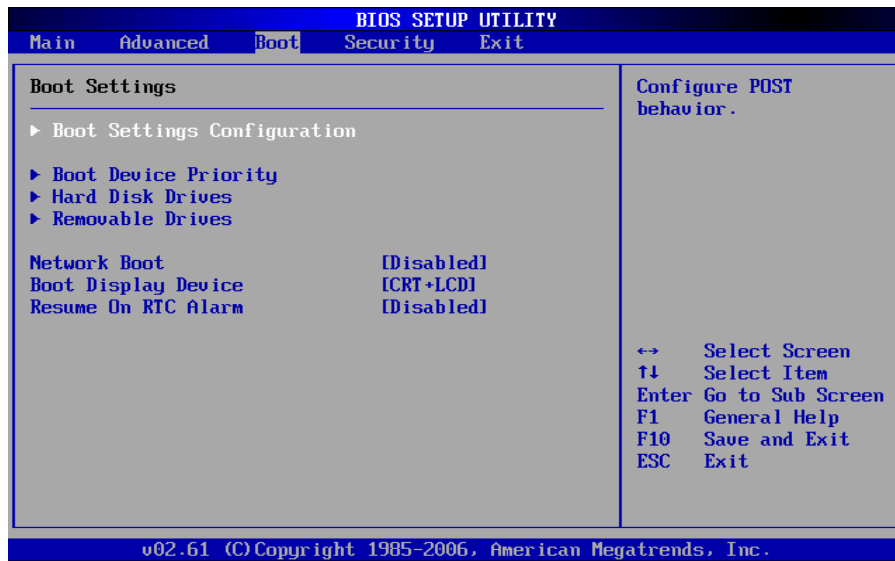
Select Change Password from the System recovery password Setup menu and press <Enter>. “Enter New Password” appears. Type the password and press <Enter>. The screen does not display the characters entered. Retypethe password as prompted and press <Enter>. If the password confirmation is incorrect, an error message appears. The password is stored in NVRAM upon completion.

## USB Configuration



Under the “Advanced” tab, use the ↑↓ keys to move cursor for selecting the options and enable or disable by pressing <Enter> for USB options as needed.

## Boot Settings

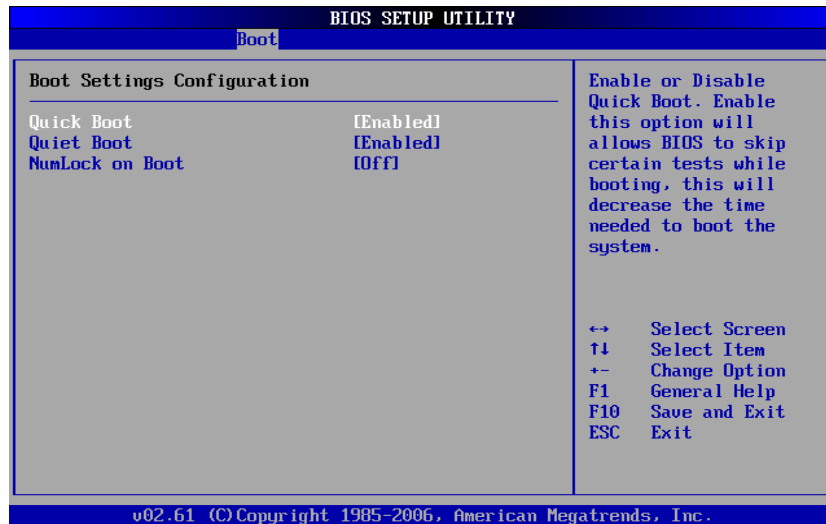


### Boot Settings:

Under the "Boot" tab, use the ↑↓ keys to move cursor over the string of "Boot Settings Configuration", "Boot Device Priority", "Hard Disk Drives" & "Removable Drives" for configuring the following features.

- Boot Setting Configuration: Configure POST behavior.
- Boot Device Drives: Set the Boot Device Priority Sequence.
- Hard Disk Drives/Removable Drives/CD & DVD Drives: Set the Boot Device Priority Sequence from available Drives.
- Network Boot: Enables or Disables Network Boot.
- Boot Display Device: Set Display Device used when system boots.
- Resume On RTC Alarm: Enable or Disable System wake up on RTC Alarm.

## Boot Settings Configuration

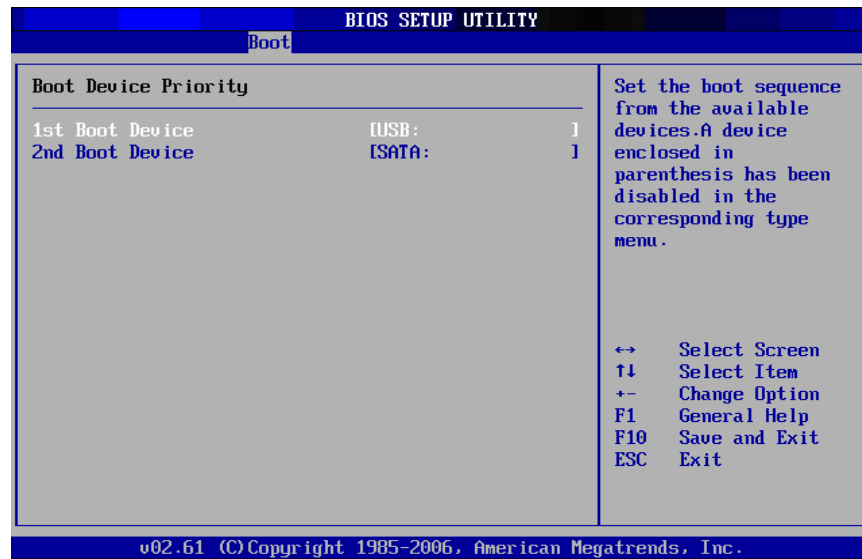


Under the "Boot" tab, use the **↑↓** keys to move cursor over the string of "Quick Boot", "Quiet Boot" & "NumLock on Boot" to enable or disable the feature.

- Quick Boot: Enable or Disable Quick Boot. Enabling this option will allow BIOS to skip certain tests while booting, this will decrease the time needed to boot the system.
- Quiet Boot: Enabling this option will show logo screen instead of POST messages.
- NumLock on Boot: set status & NumLock when system boots.

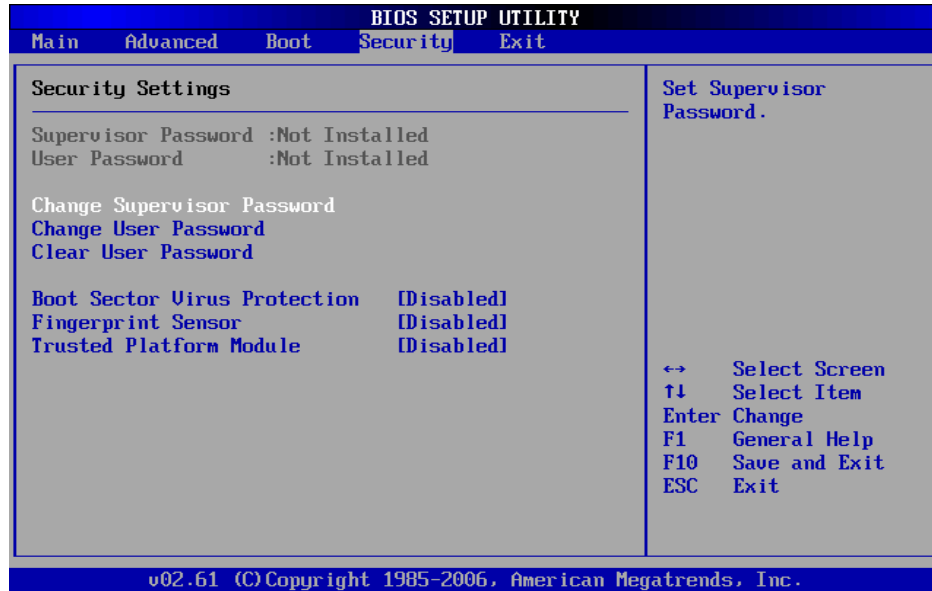


## Boot Device Priority



Set the boot sequence from the available devices. A device enclosed in parenthesis has been disabled in the corresponding type menu.

## Security Settings



### BIOS Password Setup

Provides for both a Supervisor and a User password. If you use both passwords, the Supervisor password must be set first. The system can be configured so that all users must enter a password every time the system boots or when Setup is executed, using either the Supervisor password or User password. The Supervisor and User passwords activate two different levels of password security. If you select password support, you are prompted for a one to six character password. Type the password on the keyboard. The password does not appear on the screen when typed. Make sure you write it down. If you forget it, you must drain NVRAM and reconfigure. Select Security Setup from the Setup main BIOS setup menu. All Security Setup options, such as password protection and virus protection, are described in this section. To access the sub menu for the following items, select the item and press <Enter>:

- Change Supervisor Password
- Change User Password
- Clear User Password
- Supervisor Password

### Supervisor Password

Indicate whether a supervisor password has been set. If a password has been set, the word "**Installed**" is displayed. If not, the words "**Not Installed**" displays.

### User Password

Indicates whether a user password has been set. If the password has been set, the word "**Installed**" is displayed. If not, the words "**Not Installed**" displays.

**Change Supervisor Password:**

Select Change Supervisor Password from the Security Setup menu and press <Enter>. “Enter New Password” appears. Type the password and press <Enter>. The screen does not display the characters entered. Retype the password as prompted and press <Enter>. If the password confirmation is incorrect, an error message appears. The password is stored in NVRAM upon completion.

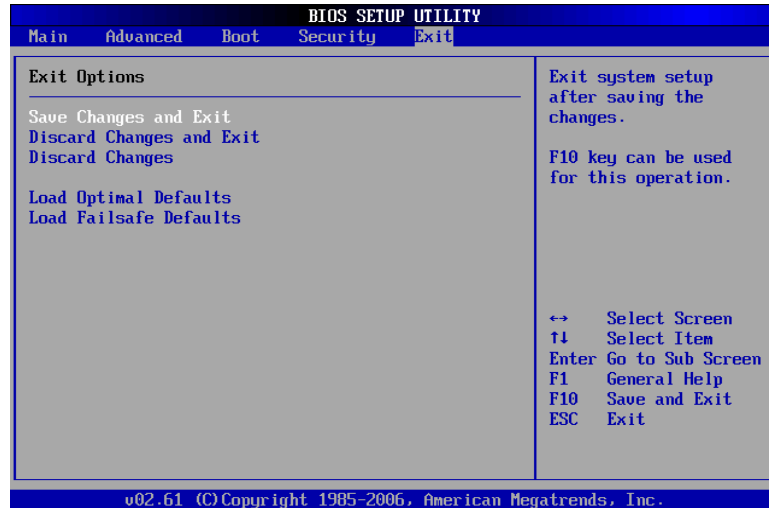
**Change User Password:**

Select Change User Password from the Security Setup menu and press <Enter>. “Enter New Password” appears. Type the password and press <Enter>. The screen does not display the characters entered. Retype the password as prompted and press <Enter>. If the password confirmation is incorrect, an error message appears. The password is stored in NVRAM upon completion.

**Clear User Password:**

Select Clear User Password from the Security Setup menu and press <Enter>. “Clear New Password” and [Ok] [Cancel] appears. Type the password and press <Enter>. The screen does not display the characters entered. Retype the password as prompted and press <Enter>. If the password confirmation is incorrect, an error message appears. The password is stored in NVRAM upon completion.

## Exit Options



### CAUTION:

If there is a conflict with the ML910 RUGGED NOTEBOOK Com Ports resource, there is a work-around to fix the conflict when you use I/O resources "2F8h", "3F8h", "2E8h" or "3E8h" assigned to PCMCIA card.

Please enter "BIOS Setup Utility" menu and perform the following setup procedure:

1. Click "Advanced".
2. Select "Peripherals Configuration".
3. To disable "Serial Port 1".

**("Serial Port 1" is located on the left side of the notebook. When you disable it, this Serial Port1 will not be functional.)**

# ML User Application (MLUA)

As previously described, the MLUA is designed for users to configure the parameters of various functions in the notebook. By using these configuration parameters, you can change the default configuration that automatically loads when you turn on the computer.

ML User Application is automatically launched every time you boot your notebook into Windows Operating System. This can be indicated by the ML User Application icon on the task bar. Double-click on the ML User Application icon will bring up the application window.



ML User Application is presented in a tab-based user interface, which consists of below tabs:

- About tab displays the following system information:
  - Motherboard Version
  - BIOS Version
  - EC Version
  - ML Service Version
  - Application Version
- GPS tab displays the name of the built-in GPS module, and it allows user to turn ON or OFF the built-in GPS module. Default setting is OFF.
- General Purpose I/O tab allows user to turn ON or OFF the GPIO port 0 and GPIO port 1 when notebook is docked to a Vehicle Dock. Default setting is OFF both GPIO ports.
- Monitor tab displays the following information:
  - Processor Temperature
  - Battery Capacity
  - Car Voltage
  - Docking Board Temperature
  - Docking Fan Speed
- WWAN Device tab displays the name of the built-in WWAN module, and it allows user to turn ON or OFF the built-in WWAN module. Default setting is OFF.

- Temperature tab displays the following temperature readings from different sensors located on the system:
  - Processor Temperature
  - LCD Display Temperature
  - System Temperature
  - Hard Disk Drive Temperature
  - Primary Battery Temperature
  - Secondary Battery Temperature
- Battery tab allows user to select the most frequently used battery charger profile which defines the battery calibration cycle.
- This WLAN Device tab displays the name of the built-in WLAN module, and it allows user to turn ON or OFF the built-in WLAN module. By default, setting is OFF.
- This Speaker Output tab allows user to define the notebook speaker behavior.

### General Guidelines

Below are the general guidelines on how to use the ML User Application:

- Click on the **OK** button to save changes and close the ML User Application window.
- Click on the **Cancel** button to discard changes and close the ML User Application.
- Click on the **Apply** button to save changes and keep the ML User Application window remained open.
- Click on the **Get Default Value** button to reset option to its default value.
- Click on the **Help** button to show the Help Content for the ML User Application.

#### Note:

Changing on ML User Application parameters will impact the ML Administrator Application configuration that has connection with ML User Application and vice versa

Specific details on the MLUA application and the settings that can be addressed are explained in more details in the On-line Help that accompanies the application.

# ML Administrator Application (MLAA)

This application is designed for administrator to configure the parameters of various functions in the notebook. By using these configuration parameters, you can change the default configuration that automatically loads when you turn on the computer.

Every time you start the ML Administrator Application, the current configuration parameters saved in EC is loaded and displayed in the ML Administrator Application window.

For specific details on this application and the various parameters that can be adjusted, please refer to the Online Help.



## **CAUTION:**

It is recommended that any changes made using the MLAA application be performed by a System Administrator.

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## CHAPTER **6**

# ***Installing Software Drivers***

To take full advantage of the unique features of your computer, some operating systems require customized software, known as drivers, to be installed.

If you purchased the computer with Windows pre-installed, your dealer may have already installed the drivers. If not, you need to install the drivers using the driver DVD supplied with your computer.

This chapter describes how to install the drivers.

In addition, to the drivers provided, there are electronic copies of the documentation available.

# How to Use the Driver DVD

**NOTE:**

1. The drivers may have been updated after this user guide was published. For latest driver updates, please contact your dealer.
2. The available items may differ according to your computer model and operation system.
3. In order to access the User Guide on this DVD you will need to have a copy of ADOBE™ Acrobat Reader on the computer or access to the Internet by the computer to use the ADOBE hot link icon to download the reader.

An Autorun program is provided on the driver DVD to help you easily install the drivers. When the driver DVD is inserted, the Autorun program automatically starts. If you need to start the program manually, run the **AutoRun.exe** program from the root directory of the driver DVD.

# Main Menu

The Main Menu Screen:

To install drivers and applications for your computer, make your selection correctly.

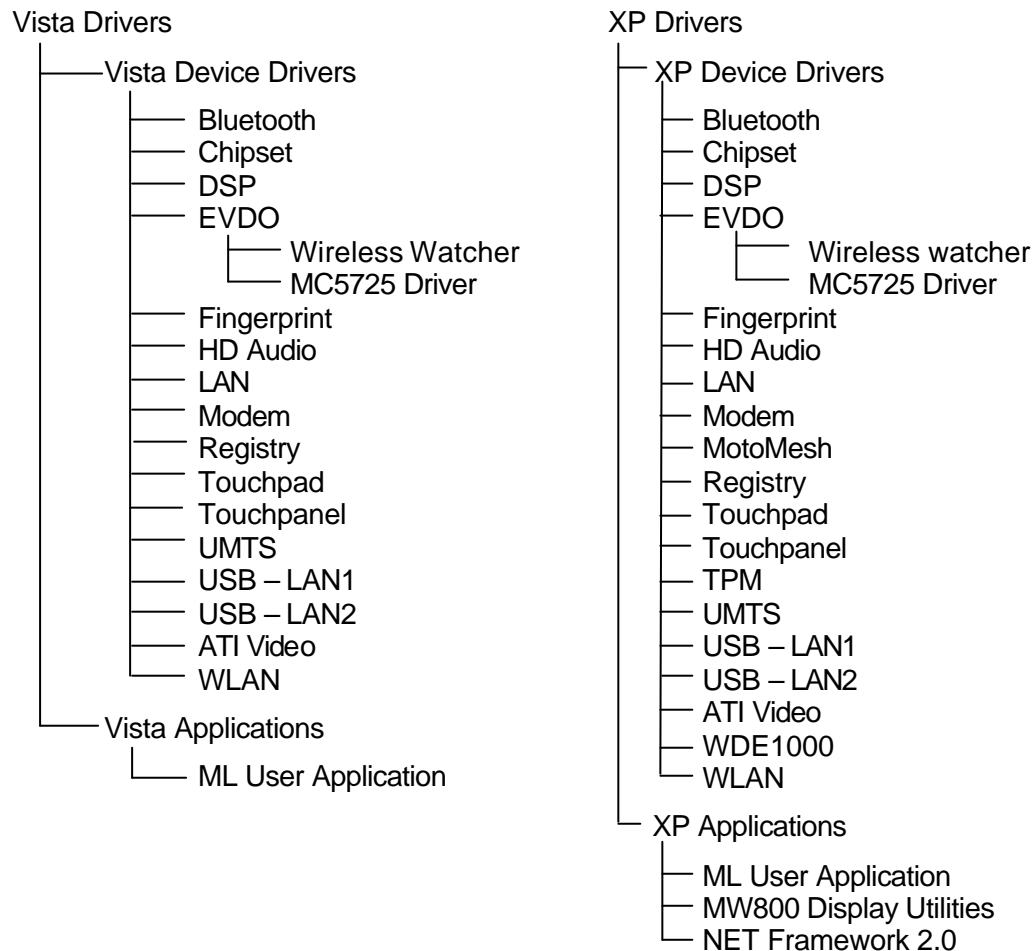


Vista and XP Device Drivers	Provides access to the available drivers' selections that apply to the operating system in your computer. Be sure to validate which OS your computer is using before installing any drivers or applications.
Browse DVD	Allows you to browse the contents of this DVD. Requires the ADOBE Reader.
User Guide	Allows you to access the electronic version of the User Guide.
Quick Reference Guide	Allows you to access the electronic version of the ML910 RUGGED NOTEBOOK User Guide.
Get ADOBE Reader Icon	This is a hot link to the ADOBE web site in order to access and download the ADOBE Reader for viewing the ML910 RUGGED NOTEBOOK User Guide on this DVD.

# Installing Device Drivers

Click on either “Vista Drivers” or “XP Drivers” in the “Main Menu” based on the operating system that you are using.

After selecting either Vista Drivers or XP Drivers the next step is to select Device Drivers or Applications to be installed. The Menu Trees shown in Figure 6-1 provides a list of the possible selections for both operating systems.



**Figure 6-1 Menu Tree**

## Selecting EVDO

Clicking on the EVDO button for either OS will allow for the selection of the Wireless Watcher or the MC5725 Driver

- Wireless Watcher - Click on the Wireless Watcher button to install the EDVO Sierra Wireless Watcher
- MC5725 Driver - Click on the EVDO MC5725 Driver button to install the EVDO driver

## Registry

Clicking on the Registry button for either OS will access a file, GPS\_COM.reg. This is neither a driver nor application, but it is a required patch for GPS Operation. There is also another file, USB\_Wake.reg that is a required patch to enable wake up of the system from standby mode by a USB device. For Vista SP1, DXVA\_patch.reg is required for Vista SP1 to adjust DVD playback performance.

## Additional XP Drivers

For the XP Drivers there are a couple of additional selection that can be made.

- MotoMesh                      Click on the MotoMesh button to install both the MotoMesh driver & application.
- TPM                              Click on the TPM button to install the Trusted Platform Module driver.
- WDE1000                      Click on the WDE1000 button to install both the WDE1000 driver & application

## Installing Applications

After selecting either Vista Drivers or XP Drivers you can also select to install OS specific applications. As shown in Figure 6-1 for both the Vista and XP Applications you can install:

- ML User Application                      Click on the ML User Application button to install the ML User Application

Both applications are designed for users to configure the parameters of various functions in the notebook. By using these configuration parameters, you can change the default configuration that automatically loads when you turn on the computer. For more information, refer to Chapter 5 of this user guide.

## Additional XP Applications

In addition to the ML Administrator and User applications common to both Vista and XP, there are 2 other XP Applications that are available to be installed.

- MW800 Display Utilities      Click on the MW800 Display Utilities button to install the MW800 Display Application Utilities
- NET Framework 2.0      Click on the NET Framework 2.0 button to install NET Framework 2.0. This is required to run ML Application.

**NOTE:**

If Video driver is already installed, then there is no need to install this again.

# ***Caring for the Computer***

Taking good care of your computer ensures trouble-free operation and also reduces the risk of damage to your computer.

This chapter gives you guidelines covering these areas of maintenance:

- How to protect the computer
- What to note when using and storing data in the computer
- How to clean the computer
- What to note when using the battery pack
- What to note when traveling with the computer

# Protecting the Computer

To safeguard the integrity of your computer data as well as the computer itself, you can protect the computer in several ways as described in this section.

## Using the Password

The power on password protects your computer against unauthorized use. If the password is set, a prompt requesting for the password appears on the screen whenever the computer is turned on.

The password is set via the BIOS program. See “Security Settings” in Chapter 5 for instructions.

## Using an Anti-Virus Strategy

The Security feature of the BIOS program protects the boot sector of the hard disk from virus attacks.

It is recommended that you install a virus-detecting program to keep your computer secure from potential viruses that could damage your files and system.



# Taking Care of the Computer

## Location Guidelines

- Use the computer where the temperature is between -20°C (-4°F) and 50°C (122°F).
- Avoid placing the computer in a location subject to high humidity, extreme temperatures, mechanical vibration, direct sunlight, or heavy dust.
- Do not cover or block any ventilation openings on the computer. For example, do not place the computer on a bed, sofa, rug, or other similar soft surface. Otherwise, overheating may occur which could result in damage to the computer.
- Keep the computer at least 13 cm (5 inches) away from electrical appliances that can generate a strong magnetic field such as TVs, refrigerators, motors, or large audio speakers.
- Do not move the computer abruptly from a cold to a warm place. A temperature difference of more than 10°C (18°F) will cause condensation inside the unit, which may damage the storage media.
- Do not place the computer on an unsteady surface.

## General Guidelines

- Do not place heavy objects on top of the computer as this may damage the display.
- The screen surface can be easily scratched. Do not use paper towels to clean the display. Avoid touching it with a ballpoint pen or pencil.
- To maximize the life of the backlight in the display, use the system's power management feature to automatically turn off the backlight. Avoid using a screen saver or other software that prevents the power management from working.

## Cleaning Guidelines

- Never clean the computer with its power on.
- Use a soft cloth moistened with water or a non-alkaline detergent to wipe the exterior of the computer.
- Gently wipe the display with a soft, lint-free cloth. Do not use alcohol or detergent on the display.
- Dust or grease on the touchscreen can affect its sensitivity. Clean the touchscreen by using adhesive tape to remove dust and grease on its surface.

# Battery Pack Guidelines

## Optimal Use of the ML910 RUGGED NOTEBOOK Battery

The battery is a consumable product and its performance will gradually degrade based on usage. To minimize battery degradation and ensure longer life, limit the number of charges and ensure the battery is not exposed to high ambient temperatures. If possible, the battery pack should only be recharged when it is nearly fully discharged. It is recommended to store the battery removed from the ML910 RUGGED NOTEBOOK with a nominal charge to prevent the battery from completely discharging. A full charge is recommended if the battery is to be stored in the ML910 RUGGED NOTEBOOK.

For optimal use, users should **avoid** the following:

- Using battery power for short periods of time and then charging the battery repeatedly.
- Using or storing battery in a high temperature location.

## Charging

Charge and discharge time will differ depending on the computer's power status and temperature. Battery charging time increases when the computer's power is on and this is also dependent on the battery's temperature. To charge the battery more quickly, power off the computer or place it on standby or in the hibernation mode. Battery charging time also increases when in low (below 10°C, or 50°F) or high (above 30°C or 86°F) temperature environments. During normal charging, (between 32°F and 113°F) the battery indicator will glow amber. When full, the indicator will glow green. The ML910 RUGGED NOTEBOOK battery will **not** be charged if its temperature is outside the allowed range of 0° to 45°C (32°F to 113°F). During this condition, the battery indicator will not be illuminated.

- **The battery should be charged within a temperature range of 10° C to 35° C (50° F to 95° F).**

When the temperature outdoors is high (35°C or above), the temperature inside the battery will be higher. Avoid charging the battery where the temperature is high, such as inside a vehicle, with all its windows closed and/or exposed to the hot sun or other places where the ambient temperature is high. Although the battery can also be charged in a temperature of 0°C, the charging time will take longer and the battery capacity will be greatly reduced.

- **It is not recommended to charge the battery more than once per day.**

Constant recharging of the battery after every use accelerates battery degradation. To increase battery life, it is recommended to recharge the battery no more than once per day or when the remaining charge drops below 20%. To increase battery life, the computer will not charge the battery immediately after it has been fully charged unless the remaining charge has fallen to less than 95%.

- **If possible, charge the battery while the computer is powered off.**

When the computer's power is on, the temperature inside the battery will increase due to the heat generated by the internal electronic components. Charging the battery at higher temperatures will degrade the battery more quickly. It is highly recommended that you charge the battery while the computer is powered off. This allows for faster charging, less degradation, and longer battery life.

## Maximizing Battery Operation Time

- **Leave the computer off when not in use**
- **Decrease the internal LCD brightness by pressing Fn+F5.**

Pressing **Fn+F5** will lower the degree of brightness, thereby reducing the power consumption.

- **Before stepping away from your computer, place it on standby or hibernation mode.**

Standby or hibernation mode will reduce power consumption.

- **To select Power Options: Click: [Start] - [Control Panel] - [System and Maintenance] - [Power Options], and select the desired power-saving setting.**
- **Motorola recommends against using screen savers or applications that place a significant load on the CPU.**

Some screen savers and applications place a large load on the CPU, producing a significant decrease in battery run time even when the computer is not being used.

- **If possible, remove unnecessary peripheral devices (USB devices, PC Cards, external mouse, etc.) when not in use.**
- **For all other power-saving settings, please refer to the Power Management Information in this section of the User Guide.**

## Storage and Non Usage for Extended Periods

**When the computer is not in use for an extended period (10 days or more):**

- **Remove the battery from the computer with a remaining charge of 30% to 45%, and then store it in a cool, dark and dry place.**

If the battery pack is kept installed in the computer, it will discharge steadily even when the computer's power is off. If this condition continues for a long period (10 days or more), the battery may fully discharge, causing performance degradation. In addition, this degradation will accelerate if the unit is stored in any high temperature environment such as inside a vehicle with windows closed, is exposed to direct sunlight or in any other environment where the temperature is high. Store the unit with battery pack where the temperature is within the range of 10°C to 30°C (50°F to 86°F). Never allow the temperature to exceed 60°C (140°F) or permanent damage may occur.

If the battery has been stored out of the notebook computer, longer than 60 days, it should be checked for remaining charge condition. If the capacity display is below 20% of remaining charge, the battery should be charged up to 30 to 45% before being placed back in storage.

## Removal of the Battery Pack

- Do not install or remove battery while the computer is on or connected to external power.



### CAUTION:

Removal of the battery pack with power ON may present a dangerous condition and may cause the computer to malfunction or cause permanent damage to the battery.

- If you remove or store the battery pack, make sure the battery terminals do not come in contact with any conductors such as metal objects or water. Otherwise, the battery may malfunction as a result of a short circuit.
- Do not touch or attempt to clean the terminals. If the battery terminals are dirty, damaged or corroded, the battery may not function or the computer may not operate properly. Properly dispose of the dirty, damaged or corroded battery and obtain a new one.

## Battery Charge Status and Battery Calibration

The battery pack has built-in functions to measure, store and display the battery charge status. As the battery pack is used over a long period of time, the remaining capacity display may become inaccurate due to aging of the battery pack, usage, and other factors. To display the remaining battery charge accurately, the Battery Calibration function will automatically check the state of the battery, and then discharge it to the appropriate level for calibration. A pre-hour rest period is then necessary. (AC or external power must stay connected during the preceding steps). After the rest period, the battery will fully charge as long as the AC power or external power is still applied. This procedure will be performed once after initial setup and every 30 to 45 days thereafter depending on the usage setting, mostly vehicle or mostly office.

### NOTE:

1. A full charge is not necessary for successful completion of the calibration.
2. Battery calibration **does not** increase the battery's capacity; it only allows the battery to recalibrate and report its full capacity accurately.

## When Traveling

- Before traveling with your computer, make a backup of your hard disk data into optical disks or other storage devices. As an added precaution, bring along an extra copy of your important data.
- Make sure the battery pack is fully charged.
- Make sure the computer is turned off.
- Do not leave objects that will press onto the display.
- Disconnect the AC adapter from the computer and take it with you. Use the AC adapter as the power source and as a battery-charger.
- Hand carry the computer. Do not check it in as luggage.
- Allow extra time for airport security. Many airports inspect electronic devices carefully.
- When going through airport security, it is recommended that you send the computer and USB disks through the X-ray machine (the device you set your bags on). Avoid the magnetic detector (the device you walk through) or the magnetic wand (the hand-held device used by security personnel).
- If you plan to travel abroad with your computer, consult your dealer for the appropriate AC power cord for use in your country of destination.

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# ***Troubleshooting***

Hardware, software, or a combination of both can cause computer problems. This chapter tells you what actions to take when solving common computer problems.

This chapter is divided into four sections:

- Preliminary checklist
- Solving common problems
- Resetting the computer
- HDD Recovery Process

# Preliminary Checklist

Here are helpful hints to follow when you encounter any problems before taking further action.

- Try to isolate the part of the computer causing the problem.
- Make sure you turn on all peripheral devices before turning on the computer.
- If an external device has a problem, make sure that the cable connections are correct and secure.
- Make sure the configuration information is properly set in the BIOS Setup Utility.
- Make sure all the device drivers are correctly installed.
- Make note of your observations. Are there any messages on the screen? Do any indicators light up? Do you hear any beeps? Detailed descriptions are useful to the service personnel when you need to consult one for assistance.

If the problem persists after you follow the instructions in this chapter, contact an authorized dealer for help.



# Solving Common Problems

For easy reference, the problems are divided into these categories.

Problem Type	Go to
Battery Problems	P. 8-4
Bluetooth™ Problems	P. 8-6
ODD Drive Problems	P. 8-6
Display Problems	P. 8-7
Hardware Device Problems	P. 8-8
Hard Disk Drive Problems	P. 8-9
Keyboard, Mouse and Touchpad Problems	P. 8-9
LAN Problems	P. 8-10
WLAN Problems	P. 8-10
Modem Problems	P. 8-11
Power Management Problems	P. 8-12
Software Problems	P. 8-12
Sound Problems	P. 8-13
Startup Problems	P. 8-13
Other Problems	P. 8-13
Resetting the Computer	P. 8-14
The HDD Recovery Process	P. 8-15

## Battery Problems

**The battery does not charge (Battery Charge indicator does not glow amber).**

- Make sure the AC adapter is properly connected.



- Make sure the battery is within the recommended charging temperature range (0-40°C). Allow time for the battery pack to return to room temperature.
- Make sure the battery pack is correctly installed.
- Make sure the battery terminals are clean, clear of debris, foreign objects, and corrosion.



### **CAUTION:**

**Do not touch or attempt to clean the terminals.** If the battery terminals are dirty, damaged or corroded the battery may not function or the computer may not operate properly. Properly dispose of the dirty, damaged or corroded battery and obtain a new one.



**The operating time of a fully charged battery becomes shorter.**

- If you often partially recharge and discharge, the battery might not be charged to its full potential. Initialize the battery to solve the problem. (See “Initializing the Battery Pack” in Chapter 3 for instructions.)

**The battery operating time indicated by the battery meter does not match the actual operating time.**

- The actual operating time can be different from the estimated time, depending on how you are using the computer. If the actual operating time is much less than the estimated time, initialize the battery. (See “Initializing the Battery Pack” in Chapter 3 for instructions.)

## Bluetooth Problems

### Unable to connect to another Bluetooth-enabled device.

- Make sure both devices are Bluetooth activated.
- Make sure the distance between the two devices is not over 10 meters or that there are no walls or other obstructions between the devices.
- Make sure the other device is not in “Hidden” mode.
- Make sure both devices are compatible (i.e., support the same profile).

### Unable to end/terminate a Bluetooth™ connection.

- If another device is connected to your computer, you can either end the connection using another device or by deactivating Bluetooth™.

## ODD Drive Problems

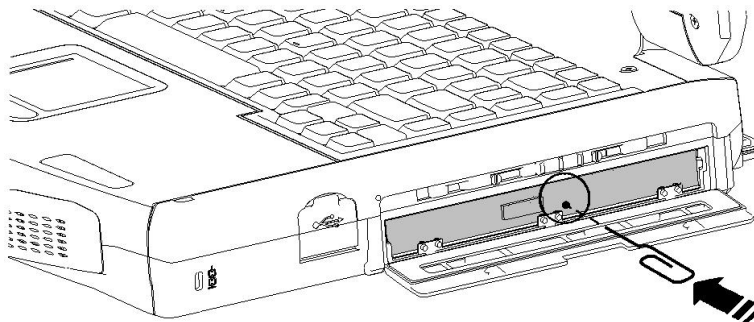
### The ODD drive cannot read a disk.

- Make sure the disk is correctly seated in the tray with the label facing up.
- Make sure the disk is not dirty. Clean the disk with a disk cleaning kit, available in most computer stores.
- Make sure the computer supports the disk or the files contained.

### Unable to eject a disk.

The disk is not properly seated in the drive. Manually release the disk following the method described next:

1. Turn off the computer.
2. Insert a small rod, such as a straightened paperclip, into the drive's manual-eject hole and push firmly to release the tray.
3. Pull the tray out until fully extended and then remove the disk.



## Display Problems

### **Nothing appears on the screen.**

- If the power on indicator is not on, check the electrical outlet, the plugs and power cords.
- If the power button does not respond to a light touch, press the button firmly.
- If you are using battery power, make sure that it has a remaining charge and that it is installed correctly.
- During operation, the screen may automatically turn off as a result of power management. Press any key to see if the screen comes back.
- The brightness level might be too low. Increase brightness by pressing **Fn+F6**.
- The display output might be set to an external device. To switch the display back to the LCD, press **Fn+F9**, or change the display through the settings in **Display Properties**.
- Try turning the computer off (refer the “**Resetting the computer**” section on P. 8–14). Wait for a few seconds then turn on again.

### **The characters on the screen are dim.**

- Adjust the brightness and/or contrast.

### **Black or white dots appear on the display at all times.**

- A small number of missing, discolored, or bright dots on the screen are an intrinsic characteristic of TFT LCD technology. It should not be regarded as a LCD defect.

### **Resolution cannot be adjusted to desired setting.**

- Make sure that the video driver is correctly installed.

### **The external monitor displays nothing.**

- Make sure that the monitor is turned on.
- Make sure that the monitor's signal cable is properly connected.



- Switch the display to the monitor by pressing **Fn+F9**, or change the display through the settings in **Display** Properties.

**Simultaneous display/multi-display does not work.**

- Make sure you turn on the external monitor before turning on the computer.
- Press **Fn+F9** to toggle through the display options or change the settings in **Display** Properties in Windows.

## Hardware Device Problems

**The computer does not recognize a newly installed device.**

- The device may not be correctly configured in the BIOS Setup Utility. Run the BIOS Setup Utility program to identify the new type.
- Determine if the device driver needs to be installed (Refer to the documentation that came with the device).
- Determine if the device needs any jumper or switch settings (Refer to the documentation that came with the device).
- Check the cables or power cords for correct connections.
- For an external device that has its own power switch, make sure the power is turned on.

## Hard Disk Drive Problems

### **The hard disk drive error message appears on the screen.**

- Insert a bootable hard disk (CD or DVD) and check the integrity of your hard drive.
- If the hard disk drive has defects, ask your dealer for help.

### **The hard disk drive operation is slow.**

- The data files stored on the hard disk drive may be badly fragmented. Use a tool such as Window's **Disk Defragmenter** to rearrange the files and improve the performance.

### **The hard disk drive in-use indicator glows without blinking.**

- The data files stored on the hard disk drive may be badly fragmented. Use a tool such as Window's **Disk Defragmenter** to rearrange the files and improve the performance.

## Keyboard, Mouse and Touchpad Problems

### **The keyboard does not respond.**

- Try connecting an external keyboard. If it works, contact an authorized dealer, as the internal keyboard cable might be loose.

### **The numeric keypad is disabled.**

- Make sure **Num Lk** is switched on. (Check if the Num Lock Indicator  glows or not.)

### **The external keyboard does not work.**

- Make sure the keyboard cable is properly connected.

### **The USB mouse does not work.**

- Make sure the mouse cable is properly connected.

### **The touchpad does not work or the pointer is difficult to control with the touchpad.**

- Make sure the touchpad is clean.

## LAN Problems

### **Unable to Access the Network.**

- Make sure the LAN driver is correctly installed.
- Make sure the LAN cable is properly connected to the RJ-45 connector and the network hub.



- Make sure the network is properly setup and configured.
- Make sure the user name or password is correct.

## WLAN Problems

### **Unable to Access the WLAN Feature.**

- Make sure the WLAN card is correctly installed.
- Make sure the necessary driver(s) is/are correctly installed.
- Make sure the WLAN feature is turned on.

### **Transmission quality is poor.**

- Your computer may be in an out-of-range situation. Move your computer closer to the Access Point or to the WLAN device it is associated with.
- Check if there is high interference in the general environment and solve the problem as described next.

### **Radio interference exists.**

- Move your computer away from the device causing the radio interference such as microwave oven and large metal objects.
- Plug your computer into an outlet on a different branch circuit from than used by the interfering device.



- If all else fails, consult your dealer or an experienced radio technician for help.

**Unable to Connect to Another WLAN device.**

- Make sure the WLAN feature is turned on.
- Make sure the SSID setting is the same for every WLAN device in the network.
- Your computer is not recognizing changes. Restart the computer.
- Make sure the IP address or subnet mask setting is correct.

**Unable to Communicate with the Computer in the Network when Infrastructure Mode is Configured.**

- Make sure the Access Point your computer is associated with is powered on and all the LEDs are working properly.
- If the quality of the operating radio channel is poor, change the Access Point and all the wireless station(s) within the BSSID to another radio channel.
- Your computer may be in an out-of-range situation. Move your computer closer to the Access Point it is associated with.
- Make sure your computer is configured with the same security option (encryption) as the Access Point.
- Use the Web Manager/Telnet of the Access Point to check whether Access Point is connected to the network.
- Reconfigure and reset the Access Point.

**Unable to Access the Network.**

- Make sure the necessary driver(s) is correctly installed.
- Make sure the network configuration is appropriate.
- Make sure the user name or password is correct.
- You have moved out of range of the network.
- Turn off power management.

## Modem Problems

**The modem does not work.**

- Make sure the modem driver is correctly installed.

## Power Management Problems

### **The computer does not enter standby/sleep mode automatically.**

- When your computer is connected to another device, it may not enter standby/sleep mode if the connection is actively in use.
- Make sure the standby/sleep time-out is enabled.

### **The computer does not enter standby/sleep mode immediately.**

- If the computer is busy performing tasks, it will only enter standby/sleep mode after completing the tasks.

### **The computer does not resume from standby/sleep mode.**

- The computer automatically enters standby/sleep mode when the battery pack drops to 3% of being fully discharged. Perform one of the following:
  - Connect the AC adapter to the computer.
  - Replace the empty battery pack with a fully charged one.

### **The computer does not enter sleep mode with the Fn+F10 hot keys.**

- Make sure the sleep function is specified on the sleep button.

## Software Problems

### **An application program does not work correctly.**

- Make sure the software is correctly installed.
- If an error message appears on the screen, consult the software's documentation for further information.
- If you are sure the operation has stopped, reset the computer. (See "Resetting the Computer" later in this chapter.)
- Use "Task Manager" by pressing **Ctrl+Alt+Del** to close the error application.

## Sound Problems

### **No sound is audible.**

- Make sure the volume control is not set too low.
- Make sure the audio driver is correctly installed.
- Make sure the computer is not on Standby mode.
- If using an external speaker, make sure the speaker is properly connected.

### **Distorted sound is produced.**

- Make sure the volume control is not set too high or too low. In many cases, a high setting can cause the audio electronics to distort the sound.

### **The sound system does not record.**

- Adjust the playback or recording sound levels.

### **The external microphone or audio device does not work.**

- Make sure the microphone is connected to the proper connector on the computer.
- Make sure the driver is installed in your computer.
- Click on the speaker icon on the taskbar and check the Windows volume control.
- Check the volume control of your computer.

## Startup Problems

### **When computer is turned on, it does not respond and the Power Indicator does not light green.**

- If you are using external AC power, make sure the AC adapter is correctly and securely connected. Also, make sure the electrical outlet works properly.
- If you are using battery power, make sure the battery has been charged prior to turning on the computer.

### **When computer is turned on, it stops after POST.**

- Restart your computer.

## Other Problems

### **The date/time is incorrect.**

- Correct the date and time via the operating system or BIOS setup Utility.
- If the above does not work, the RTC (Real-Time Clock) battery is at the end of its life. Call an authorized dealer to replace the RTC battery.

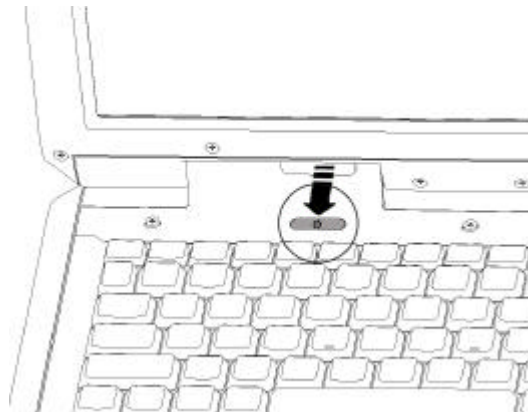
## Resetting the Computer

You may have to reset (reboot) your computer when an error occurs and the program you are using hangs up.

If the system operation appears to hang, wait for a while. It is possible that the system is processing data. Check the hard disk drive in-use indicator. If it blinks irregularly, the program may be accessing data and preventing you from using the keyboard. If you are sure the operation has stalled and the “restart” function of the operating system does not work, reset the computer.

Reset the computer by any one of the following methods:

- Press **Ctrl+Alt+Del** – to launch the “Task Manager” window and select “Shut Down” or “Restart”.
- If the above action does not work, turn off the system by pressing the Power Button for 4 seconds. Wait for at least five seconds and turn on again.
- If the above does not work, press the Power Button for 10 seconds. The system will shut down and the Embedded Controller BIOS will be reset. Wait for at least five seconds before turning it on again.



### CAUTION:

Resetting will cause any unsaved data to be lost, but will not impact any of the saved data on the hard drive. Only the Embedded Controller information will be reset. You are advised to backup all data before resetting/rebooting your computer. Applications, patches, upgrades and configurations may need to be reinstalled.

# The HDD Recovery Process

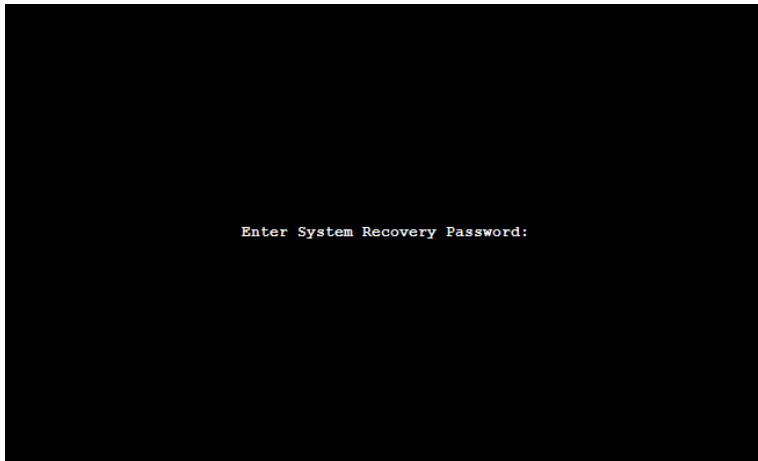
## System Recovery Program

Your system comes with a System Recovery program that can help you to diagnose and solve problems you found on your system. It consists of the following options:

- Run System Restore Utility– This option will activate the System Restore function, which is a component of Windows XP and Vista that you can use to restore your computer to its previous state without losing your personal data files.
- Run System Recovery – This option will wipe out the entire hard disk and restore your system back to its original state as it was shipped out from the factory.
- Run Disk Diagnostic Utility – This option will help you to detect disk errors and attempt to repair errors automatically.



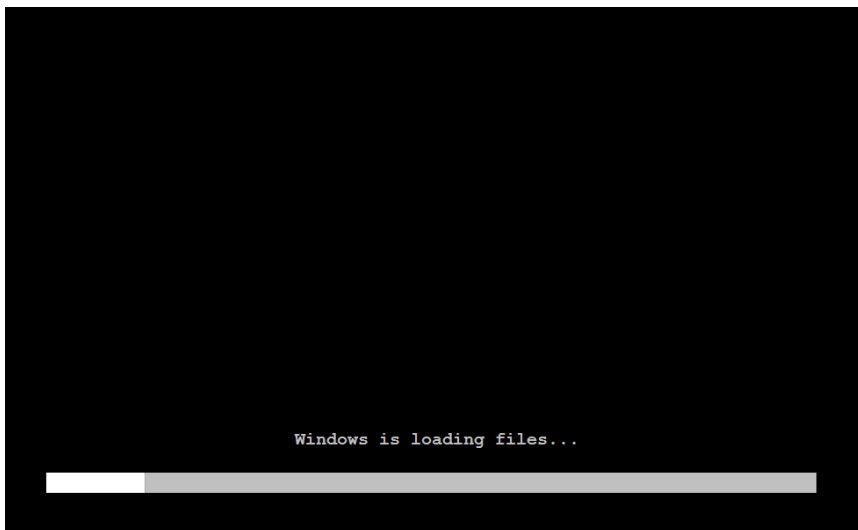
1. During system boot up, press on **Ctrl + F9** keys on keyboard to activate the System Recovery.



2. You will be prompted for the System Recovery password, enter the password then press Enter key to continue.

**Note:**

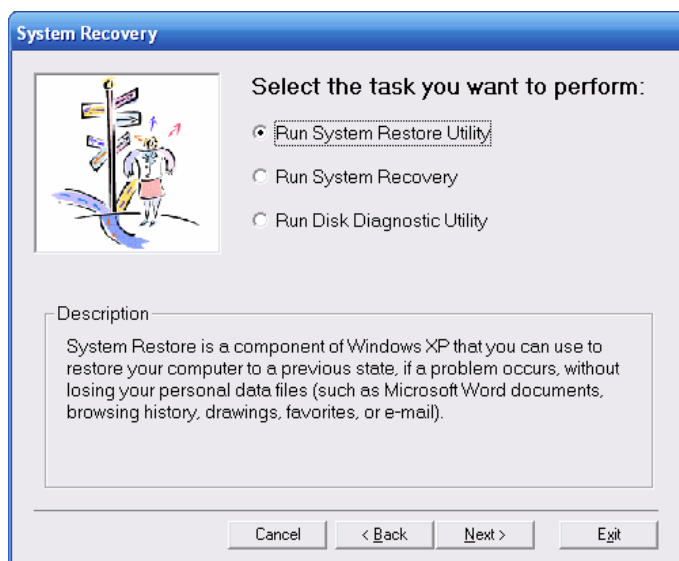
- The default System Recovery password is **123456**.
- It can be changed in BIOS Setup.
- If you fail to enter the correct password in 3 attempts, the system will be halted and you will need to restart the system in order to try again.



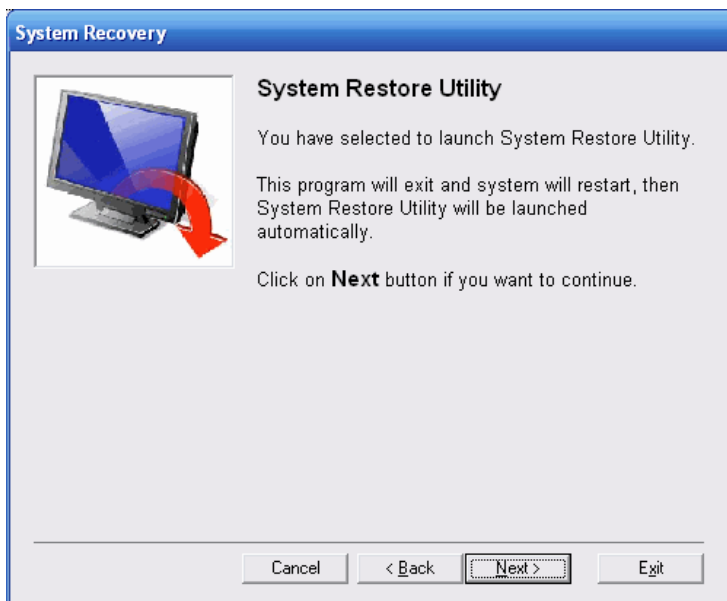
3. The system will boot into System Recovery program if you enter the correct password.



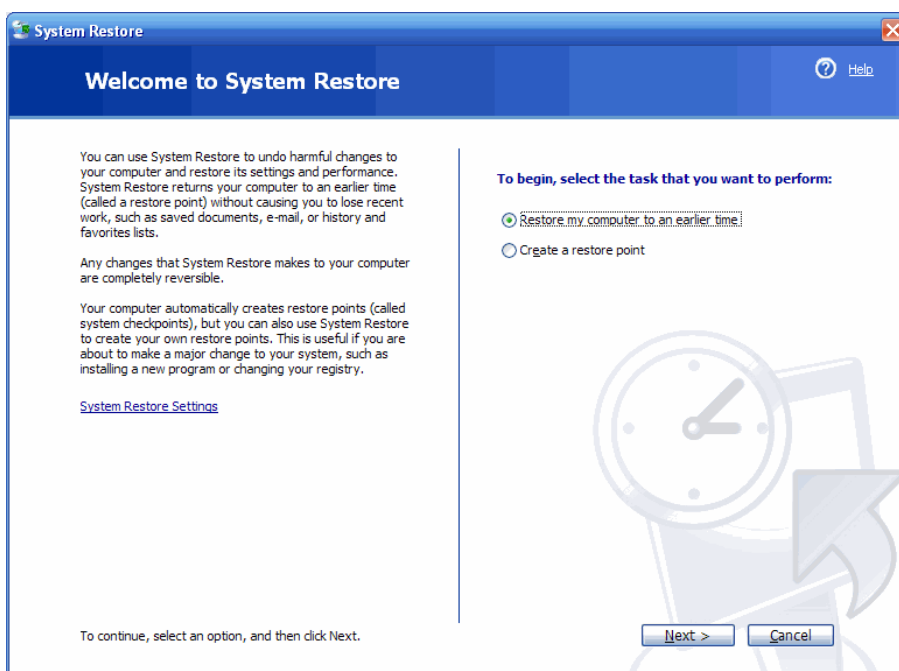
4. This is the Welcome screen you will see if you successfully activate the System Recovery program. The standard navigation of the program are outlined as below:
- To proceed to the next step, click on the **Next** button.
  - To go back to previous screen, click on the **Back** button.
  - To go back to the Welcome screen, click on the **Cancel** button.
  - To terminate this program and restart to Windows, click on the **Exit** button.



5. You will be presented with the options of tasks that you may perform with this program. A brief description of the selected task is also displayed at the bottom of the screen to help you.
- After selecting the task you want to perform, click on the **Next** button.

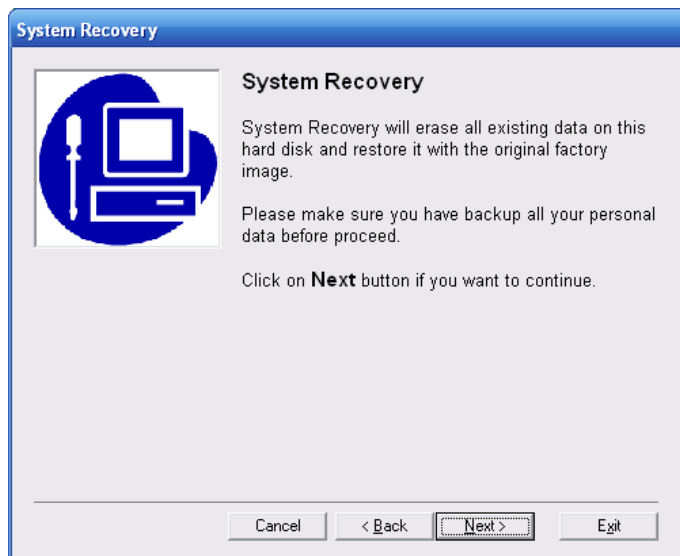


6. If you select System Restore Utility as the task that you want to perform, you will be presented with this screen.
- To proceed with System Restore, click on the **Next** button.

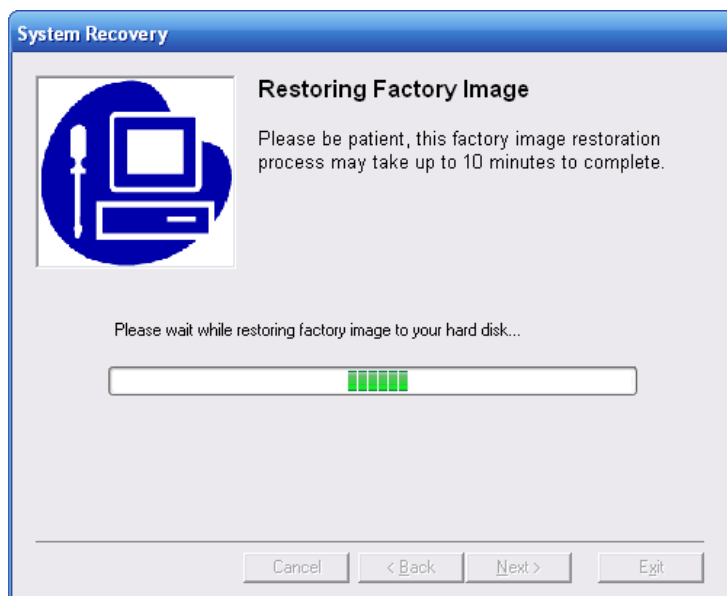


7. System Restore will be launched automatically after the system restarts.

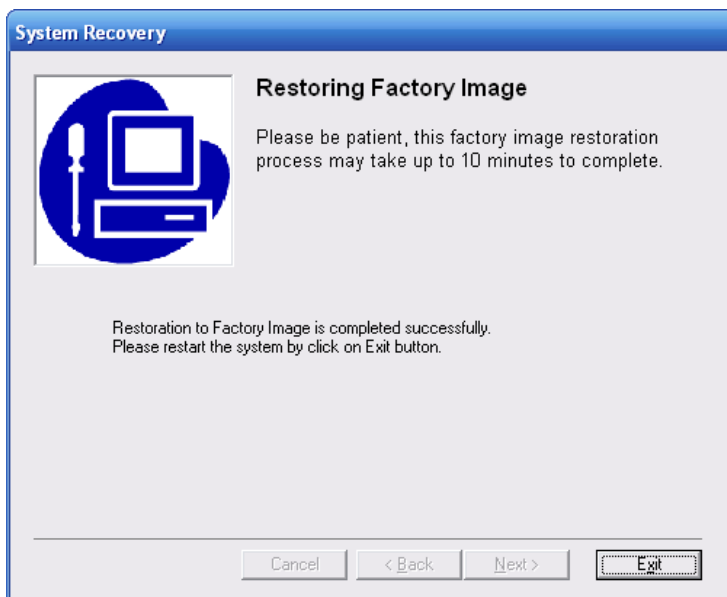




8. If you select System Recovery as the task that you want to perform, you will be presented with this screen.
- To proceed with System Recovery, click on the **Next** button.



9. Please wait while the System Recovery is in progress. It may take up to 10 minutes to complete.



10. System Recovery is successfully completed.
- To restart your system, click on the **Exit** button.



11. If you selected Disk Diagnostic Utility as the task that you want to perform, you will be presented with this screen.
- To proceed with Disk Diagnostic Utility, click on the **Next** button.



12. Please wait while Disk Diagnostic Utility is checking your hard drive.



13. Disk Diagnostic Utility will show the summary of the disk diagnosis.
- To see the detailed result, click on the **Click here to see the Disk Diagnostic Result** link.
  - To exit the program and restart to Windows, click on the **Exit** button.

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## Accessories List

Item No.	Part No.	Description
1	HKNN4004	ML910 Primary Battery
2	HKNN4006	Secondary Battery—for media bay
3	HKVN4005	Software DVD, ML910 User Manual & Drivers
4	HKLN4317	ML910 High-Tier Dock (sold as HKLN4388 in NA, HKLN4386 elsewhere)
5	HKLN4310	ML910 Mid-Tier Dock (sold as HKLN4389 in NA, HKLN4387 elsewhere)
6	HKLN4311	ML910 Office Port Replicator
7	HKUN4082	Full Travel Keyboard US , ML910
8	HKUN4083	Rubberized Keyboard Backlit Accessory US—ML910
9	HKLN4309	ML910 Spare AC Adapter
10	DDN7566	ML910 Cigarette Adapter
11	HKLN4315	80GB HDD Assembly, ML910
12	HKLN4316	120GB HDD Assembly, ML910
13	HKLN4359	Smartcard Reader, PCMCIA **
14	8508851K45	GPS Antenna
15	8508851K44	Wireless WAN Antenna
16	HKUN4064	RF Pass Through kit
17	HKUN4081	Secondary SSD 8GB Drive
18	HKLN4313	SSD Secondary Installation Kit
29	HKUN4079	CD-RW/DVD-RW Dual Drive
Carriers Modems		
19	HKUN4067	EVDO Internal Module – VERIZON
20	HKUN4071	HSDPA Internal Module – HSDPA
21	HKUN4066	PVDT Modem Installation Kit (PRM w/o Modem)
22	HKUN4075	EVDO Internal Module – SPRINT

**\*\* Note:** The smartcard reader (HKLN4359A) was designed to meet the ISO7816 operating temperature requirements (0-50C) and does not meet the MIL SPEC-810F temperature requirements. Operating outside of this temperature range may result in abnormal behavior.

Item No.	Part No.	Description
EMEA Specific Accessories		
23	HKKN4016	Cable, AC Power UK
24	HKKN4015	Cable, AC Power Europe
25	HKUN4068	Full Travel Keyboard UK, ML910
26	HKUN4065	Rubberized Keyboard Backlit Assy – ML910 UK
27	HKUN4073	HSDPA Internal Module–EMEA
Media Bay Options		
28	HKUN4078	CD-RW/DVD Combo Drive
29	HKUN4079	CD-RW/DVD-RW Dual Drive
RAM, Floppy and Mesh Modems		
30	HKUN4084	512MB RAM Module, ML910
31	HKUN4085	1GB RAM Module, ML910
32	DDN7511	USB Floppy Drive (YE-DATA) External ML910
33	HKLN4273	External PCMCIA Mesh Modem WDE1000
34	HK1235	External PCMCIA Mesh Modem WMC7300
35	HK1234	External PCMCIA Mesh Modem WMC6300

**\*\* Note:** The accessories in the above list are subject to change and availability. Contact your Motorola Dealer for the latest information.

## Acronyms

Item	Acronym	Description
1.	ACPI	Advanced Configuration and Power Interface: an industry-standard specification (co-developed by Hewlett-Packard, Intel, Microsoft, Phoenix, and Toshiba, for operating-system-directed power management for laptop, desktop, and server computers. A replacement for APM.
2.	AP	Access Point.
3.	BIOS	Basic Input/Output System.
4.	BSSID	Basic Service Set Identifier.
5.	DC	Direct Current.
6.	DVCAM	A digital video compression format provided by Sony. The DVCAM format provides fixed media compression.
7.	DVD	Digital Versatile Disk.
8.	EMEA	Europe, Middle East and Africa, a term used in traditional and electronic commerce to signify activities in those regions of the world or to refer specifically to those regions.
9.	EMI	Electromagnetic interference, Interference by electromagnetic signals that can cause reduced data integrity and increased error rates on transmission channels.
10.	FCC	Federal Communications Commission.
11.	GPS	Global Positioning System. A system that uses satellites, receivers and software to allow users to determine their precise geographic position.
12.	HDD	Hard Disk Drive.
13.	LAN	Local Area Network.
14.	LCD	Liquid Crystal Display.
15.	MAC	Media Access Control.
16.	MMCX	Multimedia Communications Exchange.

Item	Acronym	Description
17.	NVRAM	Nonvolatile RAM, RAM that retains its contents when a unit is turned off.
18.	ODD	Optical Disk Drive.
19.	OS	Operating System.
20.	PCMCIA	Personal Computer Memory Card International Association. An industry trade association that creates standards for notebook computer peripheral devices such as PC cards.
21.	PVDT	Private DataTAC, a registered trademark of Motorola Inc.
22.	RAM	Random Access Memory, a type of <a href="#">computer data storage</a> . It today takes the form of <a href="#">integrated circuits</a> that allow the stored <a href="#">data</a> to be accessed in any order, i.e. at <a href="#">random</a> .
23.	RF	Radio Frequency, The part of the general frequency spectrum between the audio and infrared light regions (about 10 kHz to 10,000,000 MHz).
24.	RoHS	Restriction of Hazardous Substance, an EU initiative to reduce and recycle hazardous substances.
25.	RTC	Real-Time Clock.
26.	S/PDIF	Sony/Philips Digital Interface: It is a standard (developed by Sony and Philips) for the digital transfer of audio data. Transferring audio data between two devices digitally avoids the degradation of quality inherent in using digital to analogue devices.
27.	SAR	Specific Absorption Rate, a measure of the rate at which <a href="#">radio frequency</a> (RF) energy is absorbed by the body when exposed to radio-frequency electromagnetic field.
28.	SATA	Serial Advanced Technology Attachment or serial ATA.
29.	SSID	Service set identifier, a code or name attached to a wireless Wi-Fi® network. All devices must use this same, case-sensitive name to communicate.
30.	TFT	Thin Film Transistor, a technology for producing thin touch screen displays.
31.	TPM	Trusted Platform Module.
32.	USB	Universal Serial Bus, An external bus connection that supports a maximum bandwidth of 12 Mbps and is widely used to connect peripheral devices (sometimes called dongles) to a computer.
33.	VCR	Video Cassette Recorder.
34.	VGA	Video Graphics Array.
35.	WEEE	Waste Electrical and Electronic Equipment: A safety directive.
36.	WLAN	Wireless Local Area Network.
37.	WWAN	Wireless Wide Area Network.
38.	WEGA	Wide Extended Graphics Array.



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# Specifications

**NOTE:**

Specifications are subject to change without any prior notice.

Parts		Specifications
CPU		Intel®Core™ Duo L2400 1.66 GHz Processor.
Video Graphics Adapter		ATI Mobility Radeon™ X1400 (dedicated 128 MB) MotionComp capability, supports hardware aid for DVD playback. Supports Dual View function. LCD/CRT display.
Memory		2 MB L2 Cache
ROM BIOS		512 KB Flash EEPROM, system and VGA BIOS, ACPI 2.0, PC2001-compliant.
RAM	System	Two 200-pin DDR2 667 SO-DIMM sockets, standard 512 MB, maximum 1 GB*2 pcs.
	Video	ATI M54 128 MB
Display	Panel	13.3" transmissive WXGA (1280 x 800) LCD with touchscreen 500 NIT Brightness.
	Video Port	VGA port, video capture.
Audio	Controller	Azalia ALC262 codec, AC97 Rev. 2.2 support.
	Ports	Optical S/PDIF output, 2-channel support.
Keyboard		Optional: Full travel QWERTY, fully-sealed backlight keyboard; rubberized backlight keyboard.
Pointing Device		Touchpad with 4 programmable buttons.
Storage Device	Hard Disk Drive	2.5-inch, SATA interface 80 GB standard shock-mounted with heater; Optional: 120 GB hard disk drive, 16 GB Solid State Drive (SSD)
	Floppy Disk Drive	Optional: External USB floppy.
	Configurable Media Bay	Configurable Media Bay. Optional: CD RW/DVD ROM (Combo Drive), CD RW/DVD RW (Dual Drive), Secondary Battery, or Removable 8 GB Secondary Solid State Drive (SSD).

Parts		Specifications
I/O Ports		<ul style="list-style-type: none"> <li>• Fingerprint Scanner; 500 dpi (Requires customer-provided software application.)</li> <li>• PCMCIA: 1 x External Type II – Cardbus support. (Accessory PCMCIA to PCI Express 34 converter card included.)</li> <li>• I/O ports: <ul style="list-style-type: none"> <li>* 1 x Serial</li> <li>* 3 x USB 2.0</li> <li>* 1 x RJ-11</li> <li>* 1 x DC input</li> <li>* 1 x Shrouded Hot-docking Port</li> <li>* 1 x RJ-45 10/100/100 Base-TLAN</li> <li>* 2 x External RF Pass-Through Ports (1:GPS, 1:WWAN)</li> </ul> </li> </ul>
Communications	Modem	56 K (V.90/V.92; 28,000 ~ 56,000 bits/s data rates)
	LAN	Broadcom BCM5755M 10/100/1000 Mbps.
	Others (Options )	Intel 3945 Wireless LAN 802.11a/b/g using diversity antennas. GPS Lassen IQ module Bluetooth V2.0
Power	AC Adapter	<ul style="list-style-type: none"> <li>• Universal AC adapter <ul style="list-style-type: none"> <li>– Input: 100-240 V, 50/60 Hz AC</li> <li>– Output: 18.5V DC/120W</li> </ul> </li> </ul>
	Battery	Primary: Smart Li-ion battery, 11.1 V/7200 mAH (3S3P) Secondary: Smart Li-ion battery, 11.1V/3500 mAH (Configurable Media Bay Option)

Parts		Specifications
Dimension (WxDxH)		3.2" x 11.1" x 13.2" (336 mm x 283 mm x 78 mm)
Operating System		Supports Windows XP, SP2, Windows Vista Business SP1 edition
Environment	Temperature	According to IEC 68-2-1,2,14/MIL-STD-810F, Method 501.4, 502.4 Operating: -20°C to 60°C (Tested)
	Humidity	According to IEC 68-2-30/MIL-STD-810F, Method 507.4 5% to 95% RH, non-condensing
	Altitude	According to IEC 68-2-30/MIL-STD-810F, Method 500.4 Operating: 15,000 ft Non-operating: 40,000 ft altitude change rate: 2,000 ft/min
	Shock	According to IEC 68-2-27/MIL-STD-810F, Method 516.5 Operating: 40g, 11 ms, half sine wave Non-operating: 50g, 11 ms, half sine wave
	Vibration	According to IEC 68-2-6/MIL-STD-810F, Method 514.5 Operating: 10~55Hz/0.075mm, 55~500Hz/1.0g Non-operating: 10~55Hz/0.15mm, 55~500Hz/2.0g
	Drop	According to IEC 68-2-32/MIL-STD-810F, Method 516.5 (Base unit only.) Survives 30~36 drops depending on configuration

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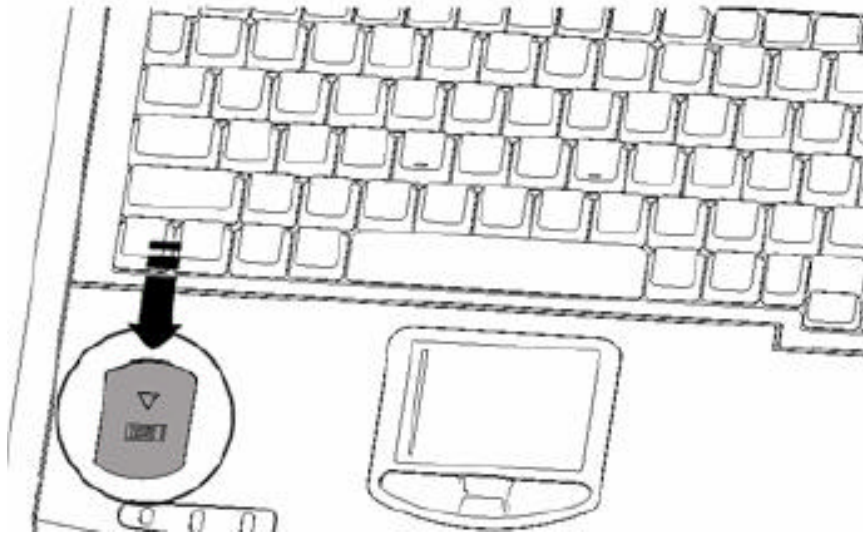
## ***Fingerprint Recognition***

Your ML910 RUGGED NOTEBOOK features a fingerprint recognition system designed for computer security. It provides a high level of user convenience and gives you a set of powerful tools for securing your computer and protecting your private data. The system can:

- Display fingerprint images derived from the sensor IC .
- Enroll new users .
- Extract fingerprint templates from raw images, and store them in a local database.
- Match live-scan fingerprints against the local database.

# Finger Placement

1. The fingerprint sensor is located at the left side of the palm rest.
2. Slide your finger in the arrow's direction firmly with steady pressure.



**NOTE:**

Be sure that you are making contact with the sensor surface during the scan. The system works best when user follows the recommended direction.

# Fingerprint Recognition

The ML910 RUGGED NOTEBOOK has a separate embedded Fingerprint Module and a Trusted Platform Module (TPM) included in the unit. This will allow ML910 RUGGED NOTEBOOK to support applications for Trusted Platform Module (TPM) and Fingerprint Recognition.

1. Fingerprint Module can support Fingerprint Recognition applications which can provide for the following features:

- Computers
- Application of Protection
- Secure Windows Logon
- Enterprise Class Password Management
- File

**NOTE:**

1. Above functions will be defined by the Application Provider and the software that is used with the Fingerprint Module.
2. Installation of the Fingerprint Module driver can be found in Chapter 6 of this User Guide.

2. The Trusted Platform Module (TPM) can support applications for TPM device in the unit. This can provide the following functions based on the application used:

- Personal Secure Drive
- Encrypted Virtual Drive
- Protection against dictionary attacks

**NOTE:**

1. Above functions will be defined by the Application Provider.
2. Installation of the TPM driver can be found in Chapter 6 of this User Guide.



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## ***Self Install Internal Wireless***

### ***Modems***

Most customers will purchase their embedded EVDO or HSDPA WWAN modems from Motorola and have them pre-installed by the factory. It is possible to add an EVDO REV A. or HSDPA WWAN (Cellular Carrier) modem later by purchasing a WWAN module from Motorola.

Normally, Motorola's Agencies can provide several kinds of Wireless Internal Modules which are different in number of connectors and the number of WWAN cables that are connected. Please refer to the following for installation information. Only the items listed in the below table are Motorola certified devices for the ML910 RUGGED NOTEBOOK operation.

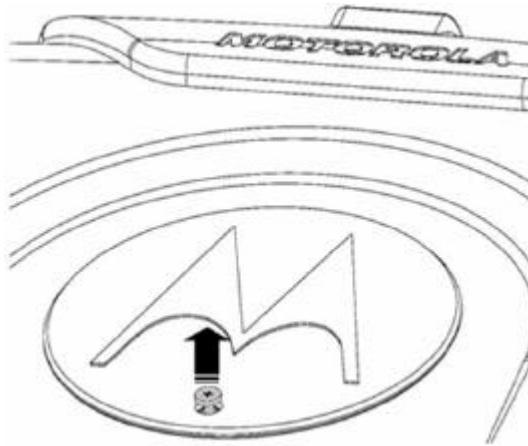
Item	Kit No.	Description	Connector Numbers	WWAN Cable
1	HKUN4067	Wireless EVDO REV. A Internal Module - VERIZON	2	2
2	HKUN4075	Wireless EVDO REV. A Internal Module - SPRINT	2	2
3	HKUN4071	Wireless HSDPA Internal Module – HSDPA	1	1
4	HKUN4073	Wireless HSDPA Internal Module - EMEA	1	1

## Installation of the HSDPA Internal Modem

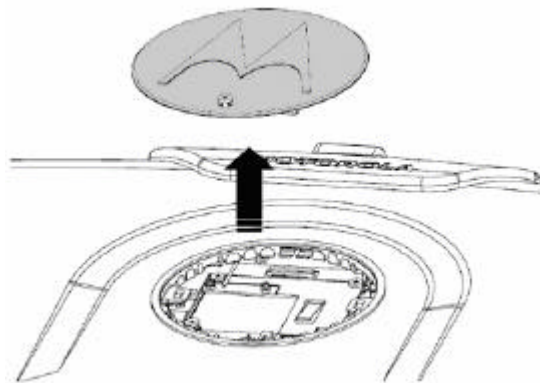
HSDPA Internal kits should have one mini Card port and one WWAN cable such as HKUN4071 and HKUN4073. Please refer to following procedure for installation.

Remove the M logo for installation.

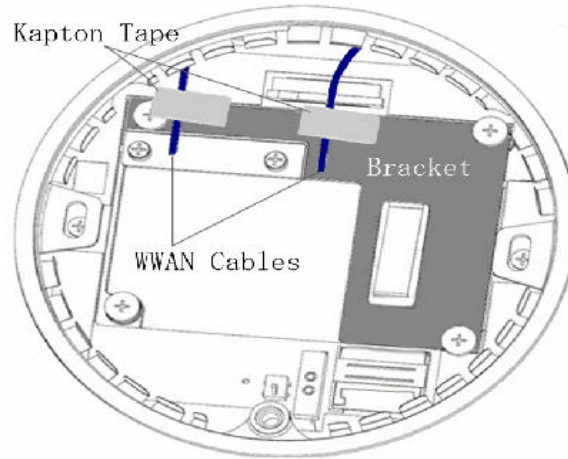
- Remove one screw from the M logo.



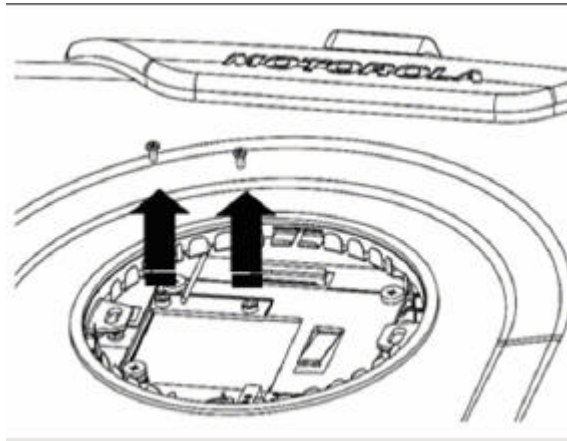
- Remove the M logo.



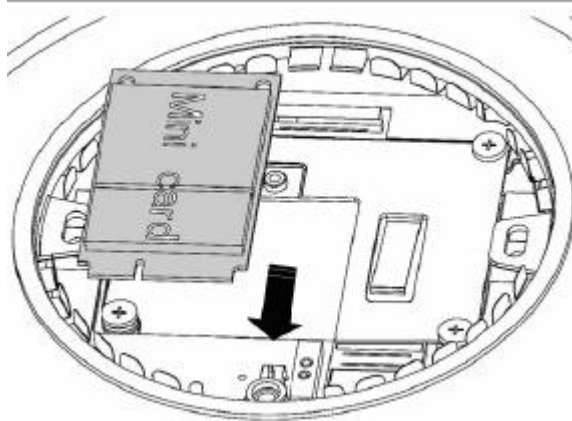
- You will find two antenna (WWAN) cables attached by two pieces of Kapton® tape on the mini card bracket.



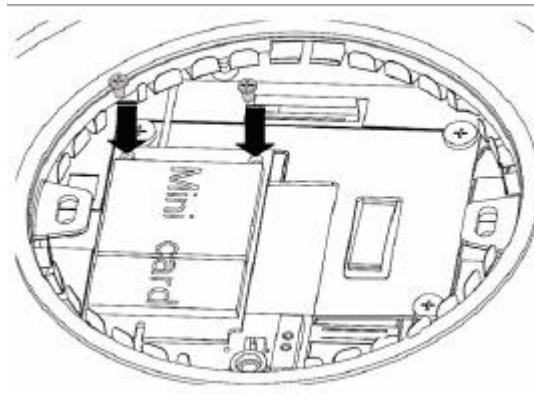
- Remove Kapton® tape from the cable.
- Remove two screws from the mini card bracket.



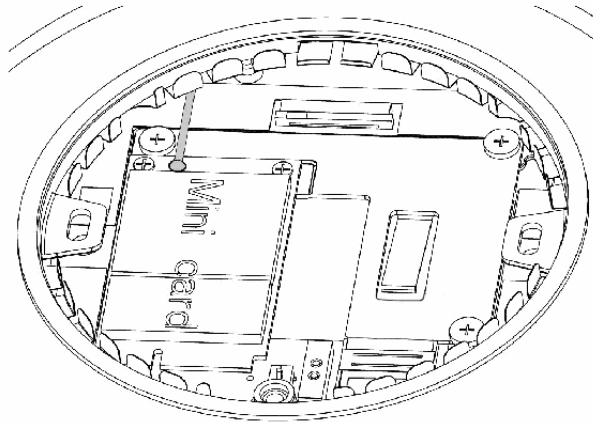
- Insert the Wireless HSDPA Modem Kit.



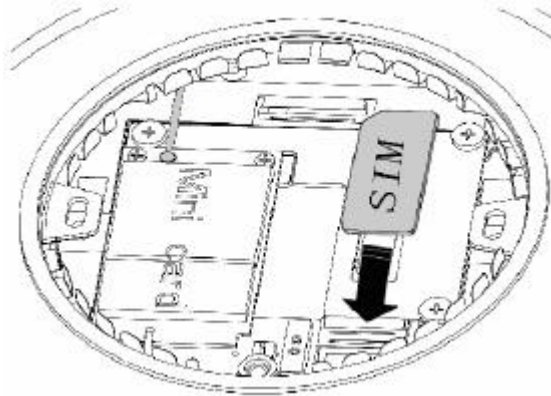
- Fix two screws on the Wireless HSDPA Modem kit.



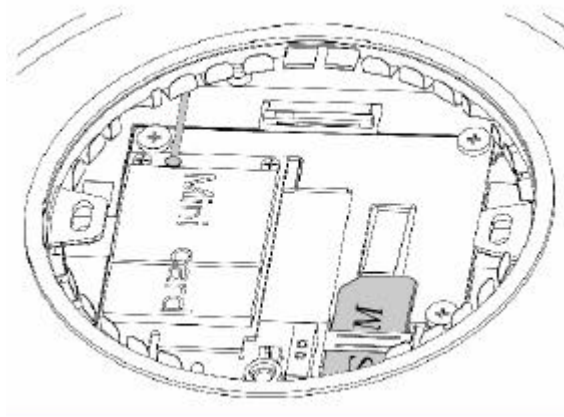
- Snap the Black WWAN cable onto the main port on the mini card.



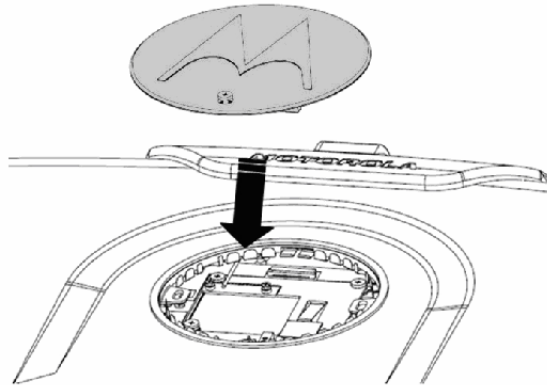
- Insert the SIM card.



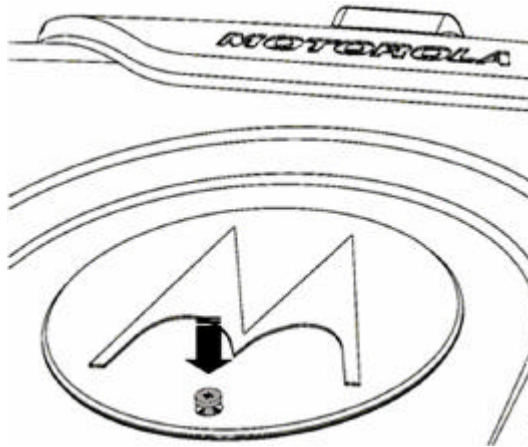
- Installed Internal Wireless HSDPA Modem kit with SIM card.



- Place the M logo cover back on ML910 RUGGED NOTEBOOK unit.



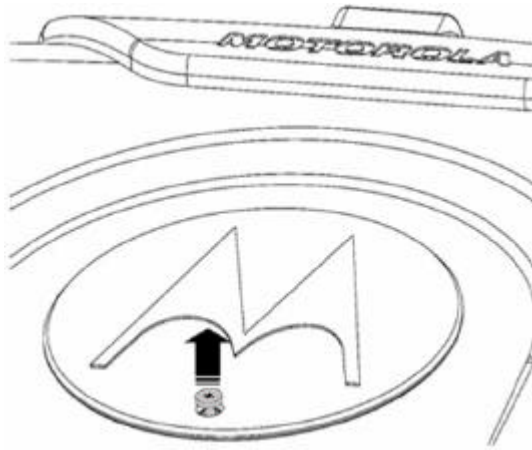
- Fix the M logo with a screw.



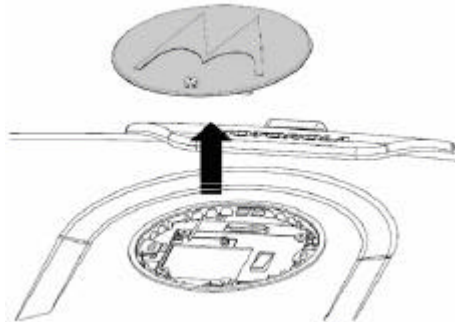
## Installation of the EVDO REV. A Internal Modem

EVDO REV. A Internal Kits should have two mini card port connectors and two WWAN Cables such as in Kit No. HKUN4067 and HKUN4075. Please refer to following procedure for installation.

- Remove one screw from the M logo.

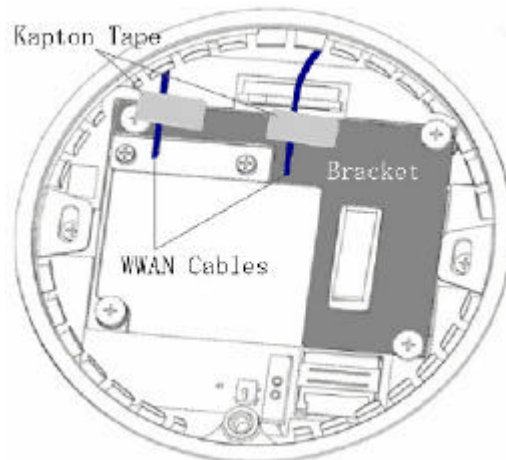


- Remove the M logo.

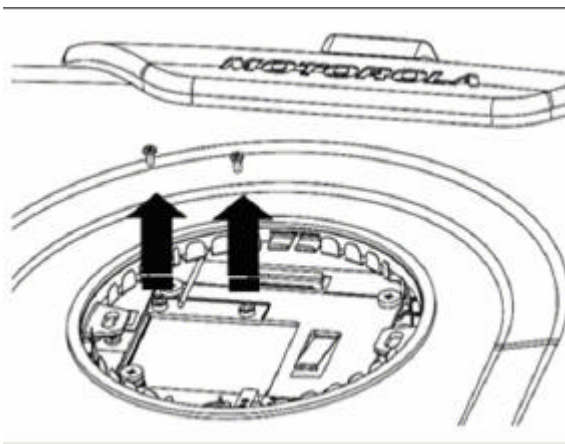




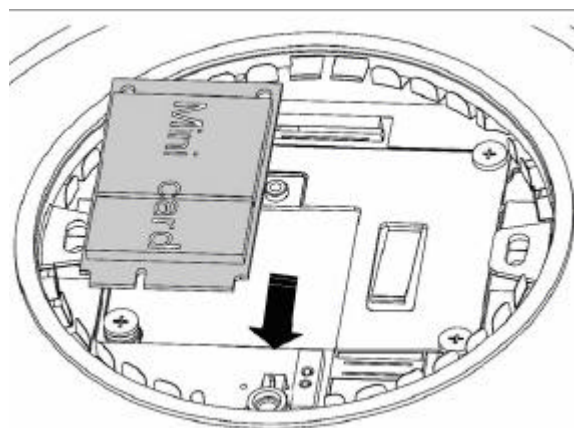
- You will find two antenna (WWAN) cables attached by two pieces of Kapton® tape on the mini card bracket.



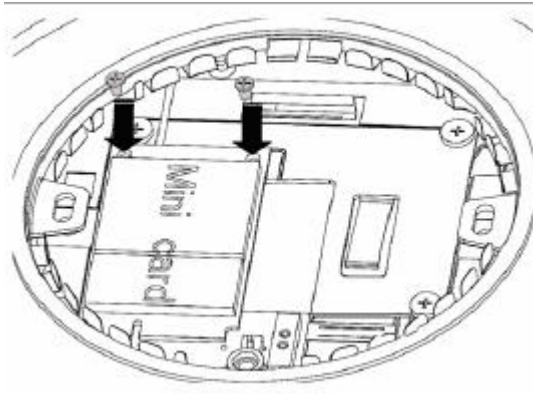
- Remove Kapton® tape from the cable.
- Remove two screws from the mini card bracket.



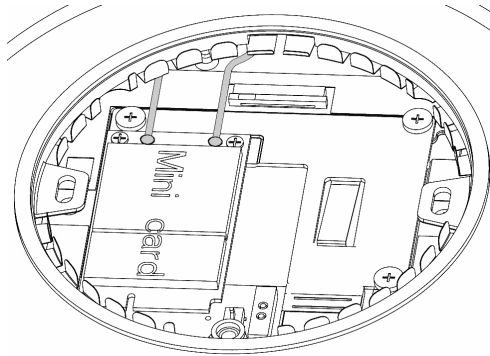
- Insert the Wireless EVDO REV. A Module Kit.



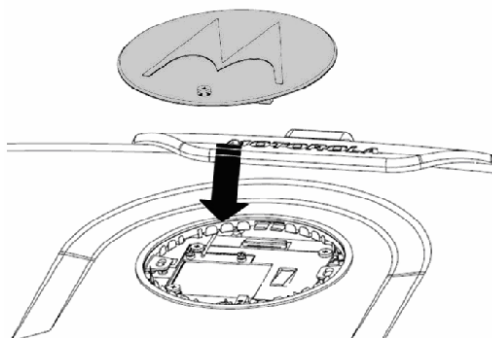
- Fix two screws on the Wireless EVDO REV. A Module.



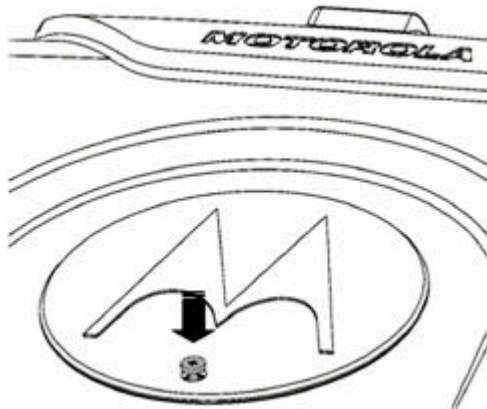
- Snap the Black WWAN cable onto the Main port of the mini card and the White WWAN cable onto the AUX post of the mini card.



- Place the M logo back on ML910 RUGGED NOTEBOOK unit.

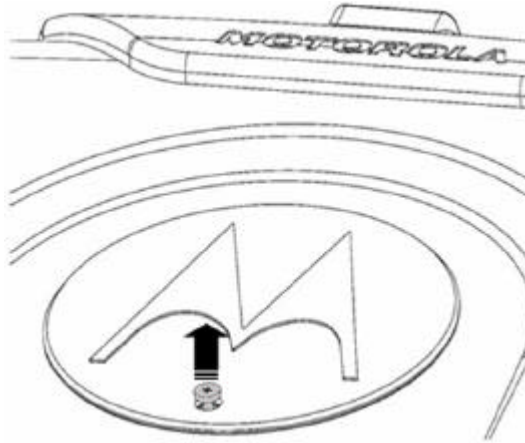


- Fix the M logo with a screw.

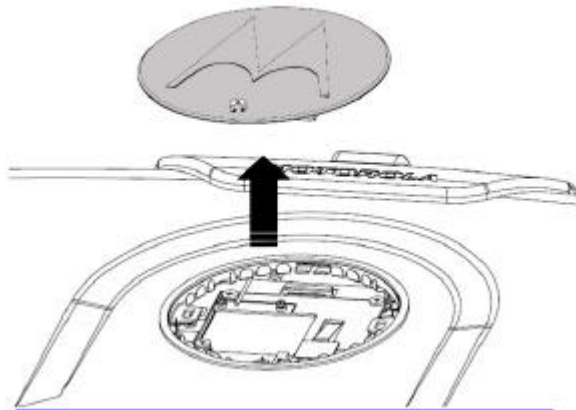


## Installation of the PRM240 Internal Modem

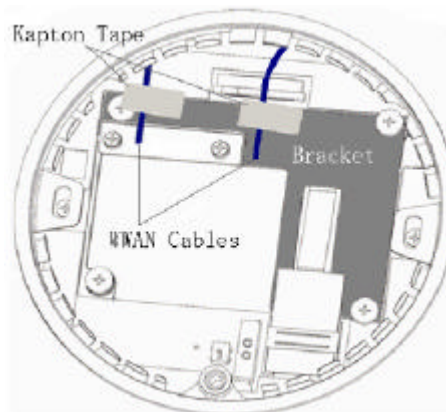
- Remove one screw from the M logo.



- Remove the M logo.

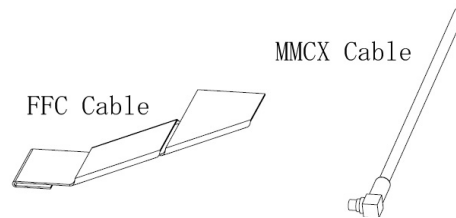


- You will find two WWAN cables attached by two pieces of Kapton® tape on the mini card bracket.

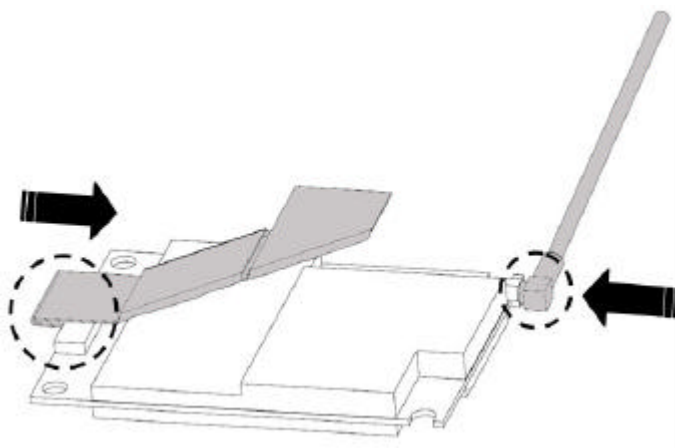


- Remove Kapton® tape from cables.

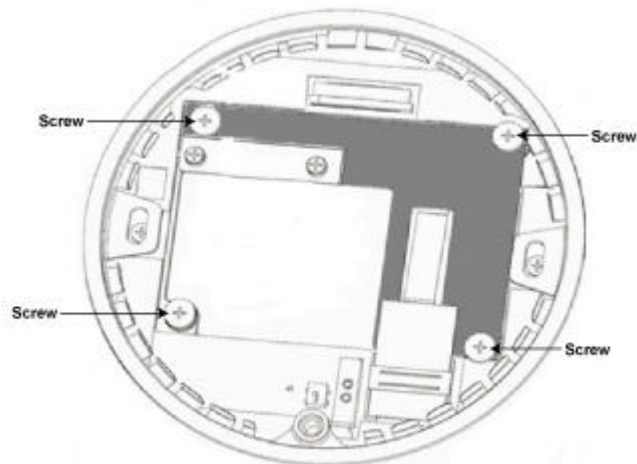
- Each PVDT Modem Installation Kit (PRM w/o Modem) (kit no. HKUN4066), it includes one FFC cable, one MMCX cable and one PRM240 Internal Modem module.



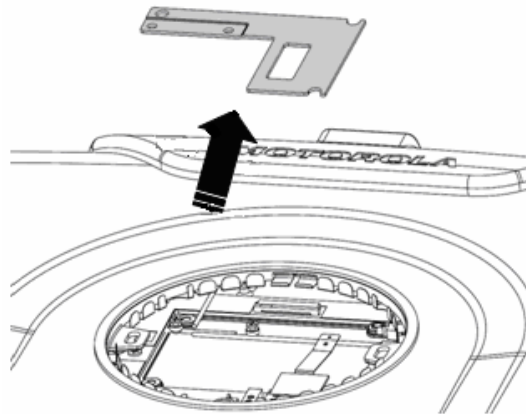
- Connect one side of the MMCX cable to the PRM240 module.



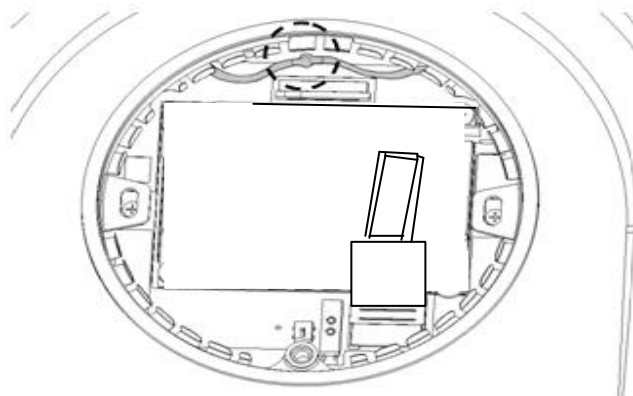
- Remove four screws from the mini card bracket.



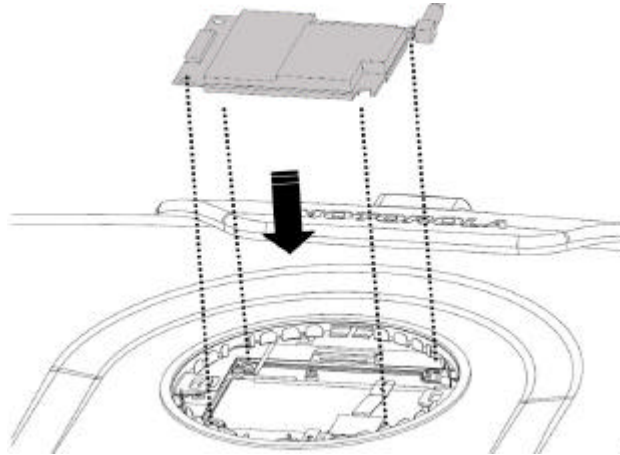
- Remove the mini card bracket from ML910 RUGGED NOTEBOOK unit.



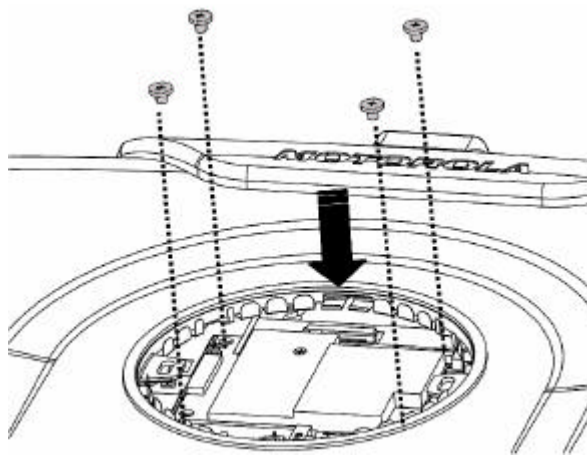
- Snap the Black WWAN cable to the MMCX cable prior to installing the module.



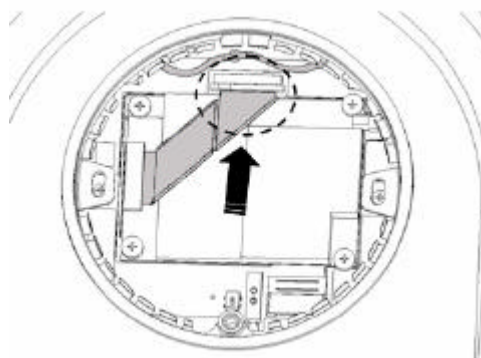
- Place the PRM240 module on ML910 RUGGED NOTEBOOK by matching each corner of the PRM240 Internal Modem module with the four screw holes.



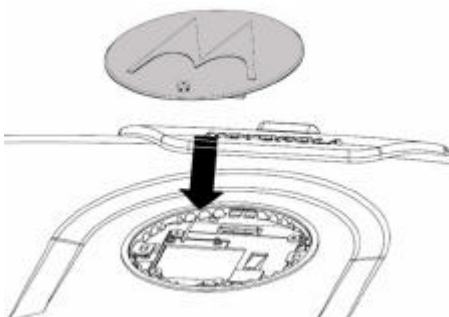
- Fix four screws back on to lock the PRM240 Internal Modem Module.



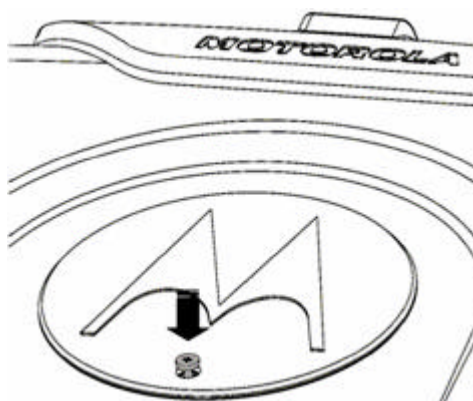
- Connect the FFC cable to the FFC connector on the main board.



- Place the M logo back on ML910 RUGGED NOTEBOOK unit.



- Fix the M logo with a screw.





## RoHS / WEEE


**MOTOROLA**


**Waste (Disposal)  
of your Electronic  
and Electric  
Equipment**

6866537D90-P



**Directive de l'Union Européenne (UE)  
sur l'Élimination des Équipements  
Électriques et Électroniques (DEEE)**

La directive DEEE de l'Union Européenne impose que les produits vendus dans les pays de l'UE portent la marque (éventuellement sur l'emballage) d'une poubelle sur roues barrée d'une croix. Comme la directive DEEE l'explique, cette marque composée d'une poubelle sur roues barrée d'une croix signifie que les clients et les utilisateurs des pays de l'UE ne devraient pas inclure leurs équipements électriques et électroniques ou accessoires dans leurs déchets ménagers. Les clients ou utilisateurs des pays de l'UE devraient contacter le représentant local de leur fournisseur d'équipement ou un centre de service pour s'informer sur le système de collection de déchets dans leur pays.



**European Union (EU) Waste of  
Electrical and Electronic Equipment  
(WEEE) directive**

The European Union's WEEE directive requires that products sold into EU countries must have the crossed out trashbin label on the product (or the package in some cases). As defined by the WEEE directive, this cross-out trashbin label means that customers and end-users in EU countries should not dispose of electronic and electrical equipment or accessories in household waste. Customers or end-users in EU countries should contact their local equipment supplier representative or service centre for information about the waste collection system in their country.



**La direttiva della Unione Europea (EU)  
sui rifiuti di apparecchiature elettriche  
ed elettroniche (RAEE)**

La direttiva RAEE della Unione Europea richiede che i prodotti venduti nei paesi della UE debbano essere marcati con il simbolo di un contenitore di spazzatura mobile barrato sul prodotto (o in casi eccezionali sull'imballaggio). Il simbolo di un contenitore di spazzatura mobile barrato, conforme alla direttiva RAEE, significa che i clienti e i detentori finali nei paesi della UE, non dovrebbero smaltire gli apparecchi o gli accessori elettronici ed elettrici con i normali rifiuti domestici. I clienti o i detentori finali nei paesi della UE dovrebbero rivolgersi al fornitore, rappresentante o centro di riparazione locale per ottenere informazioni sui sistemi predisposti nel proprio paese per la raccolta di tali apparecchi usati.

**DE** **Richtlinie über Elektro- und Elektronik-Altgeräte (WEEE) der Europäischen Union (EU)**

Produkte, die in EU Ländern auf den Markt gebracht werden, müssen mit einer durchgestrichenen Abfalltonne gekennzeichnet sein (oder in einzelnen Fällen die Verpackung). Die WEEE Richtlinie definiert, dass Kunden und Endnutzer in Ländern der Europäischen Union (EU) elektronische und elektrische Geräte sowie elektronisches oder elektrisches Zubehör nicht in den Hausmüll entsorgen dürfen. Innerhalb der EU setzen Sie sich bitte mit dem örtlichen Vertreter oder Kundendienst Ihres Geräteherstellers in Verbindung, der Ihnen Auskunft zur Altgeräteentsorgung/-abholung geben kann.

**ES** **La directiva de la Unión Europea (EU) sobre Residuos de Aparatos Eléctricos y Electrónicos (RAEE)**

La directiva RAEE de la Unión Europea requiere que los productos vendidos en los países de la UE sean rotulados mediante el símbolo de un contenedor de basura tachado sobre el producto (o en algunos casos sobre el envase). Conforme con la directiva RAEE, el símbolo del contenedor de basura tachado significa que los clientes y usuarios finales en los países de la UE no deberían de disponer los aparatos eléctricos o electrónicos ni ninguno de sus componentes junto a la basura doméstica. Clientes o usuarios finales en los países de la UE deben entrar en contacto con el centro de servicio o proveedores del equipo para obtener información acerca del sistema de recolección en su país.

**PR** **Directiva da União Europeia (UE) relativa aos Resíduos de Equipamentos Eléctricos e Electrónicos (REEE)**

A Directiva REEE da União Europeia exige que os produtos vendidos em países da UE tenham a etiqueta com o símbolo do contentor do lixo barrado com uma cruz no próprio produto (ou, em determinados casos, na embalagem). Tal como definido pela Directiva REEE, este contentor do lixo barrado com uma cruz significa que os clientes e utilizadores finais nos países da UE não devem eliminar equipamentos eléctricos e electrónicos ou acessórios junto com o lixo doméstico. Os clientes ou utilizadores finais nos países da UE devem contactar o representante local do fornecedor do equipamento ou um centro de assistência para obter informações relativas ao sistema de recolha de lixo no país onde vivem.

**SV** **Europaparlamentets och rådets direktiv om avfall som utgörs av eller innehåller elektriska eller elektroniska produkter (WEEE)**

Europaparlamentets direktiv om avfall av elapparater (WEEE) förutsätter, att elektriska apparater (eller i vissa fall deras förpackningar) till salu i EU-länderna skall förses med en symbol som markerar en överkrossad soptunna på hjul. Enligt direktivet bör elapparater eller elektriska tillbehör försedda med denna symbol icke kastas bland allmänt hushållsavfall. I EU-länderna kan man kontakta sina lokala leverantör eller ett servicecenter för att få information om insamling av avfall.

**NL De richtlijn inzake afgedankte elektrische en elektronische apparatuur (AEEA) van de Europese Unie (EU)**

De richtlijn AEEA van de Europese Unie vereist dat producten die in de landen van de EU worden verkocht (of in sommige gevallen de verpakking daarvan), moeten zijn voorzien van het etiket met een doorgekruiste vuilnisbak. Zoals bepaald door de richtlijn AEEA, betekent dit etiket met de doorgekruiste vuilnisbak dat klanten en eindgebruikers in de landen van de EU elektrische en elektronische apparatuur of toebehoren niet met het huisvuil mogen wegwerpen. Klanten en eindgebruikers binnen de EU moeten contact opnemen met hun plaatselijke leverancier of onderhoudscentrum voor informatie over het afvalinzamelsysteem in hun land.

**DA Den Europæiske Unions (EU) direktiv vedrørende bortskaffelse af elektrisk og elektronisk udstyr (WEEE-direktivet)**

Den Europæiske Unions WEEE-direktiv fordrer, at produkter, der sælges til EU-lande, skal bære en mærkat med en overstreget affaldsspand (i visse tilfælde skal mærkaten være placeret på emballagen). Som angivet i WEEE-direktivet betyder dette mærkat med en overstreget affaldsspand, at kunder og slutbrugere i EU-lande ikke må bortskaffe elektronisk og elektrisk udstyr eller tilbehør sammen med husholdningsaffald. Kunder eller slutbrugere i EU-lande skal kontakte deres lokale leverandørrepræsentant eller servicecenter for at få oplysninger om det pågældende lands affaldsindsamlingssystem.

**SF Euroopan parlamentin ja neuvoston direktiivi sähkö- ja elektroniikkalaiteromusta (WEEE)**

Euroopan parlamentin ja neuvoston direktiivi sähkö- ja elektroniikkaromusta (WEEE) edellyttää, että laitteet (jossain tapauksissa pakkaukset) on varustettava merkillä, jossa on ristillä yliviivattu, pyörillä varustettu roska-astia. Direktiivi määrittelee, että tällä merkillä varustettua sähkö- tai elektroniikkaromua ei saa heittää talousjätteisiin. Tietoa kierrätysmateriaalin lajittelusta EU-maissa saa paikalliselta laitteen jälleenmyyjältä tai kierrätyskeskuksesta.

**FL De Europese WEEE-richtlijn (Waste of Electrical and Electronic Equipment)**

De Europese WEEE-richtlijn vereist dat producten die worden verkocht in EU-landen beschikken over het doorgestreepte vuilnisemmerlabel op het product (of, in sommige gevallen, op de verpakking). Hiermee wil de WEEE-richtlijn klanten en eindgebruikers in EU-landen erop wijzen dat ze hun elektronische en elektrische apparatuur of accessoires niet mogen weggooien met het huishoudelijk afval. Klanten of eindgebruikers in EU-landen dienen contact op te nemen met de vertegenwoordiger of het servicecentrum van de lokale leverancier voor informatie over het afvalinzamelingssysteem in hun land.



**HU**

**Az Európai Unió (EU) Elektromos és elektronikus készülék hulladékaira (WEEE) vonatkozóirányelve**

Az Európai Unió WEEE irányelve előírja, hogy az EU tagállamaiban értékesített termékek esetében legyen feltüntetve az áthúzott hulladékgyűjtő ábrázoló címke a terméken (vagy egyes esetekben a csomagoláson). A WEEE irányelvben foglaltak szerint ez az áthúzott hulladékgyűjtő ábrázoló címke azt jelenti, hogy az EU tagállamokban az ügyfelek és a végfelhasználók nem dobhatják ki az elektronikai és elektromos készülékeket vagy tartozékokat a háztartási hulladékgyűjtőkbe. Az EU tagállamokban az ügyfelek és a végfelhasználók lépjenek kapcsolatba a helyi berendezés-szállító képviselőjével vagy a szervíz központtal, hogy tájékozódjanak az országuk hulladékgyűjtő rendszeréről.

**GK**

**Ευρωπαϊκή Ένωση (ΕΕ) Οδηγία για τα Απόβλητα Ηλεκτρικού και Ηλεκτρονικού Εξοπλισμού (WEEE)**

Η οδηγία WEEE της Ευρωπαϊκής Ένωσης απαιτεί τα προϊόντα που πωλούνται σε χώρες της ΕΕ να έχουν μια ετικέτα με ένα διαγραμμένο δοχείο απορριμμάτων πάνω στο προϊόν (ή στη συσκευασία σε κάποιες περιπτώσεις). Όπως ορίζεται από την οδηγία WEEE, αυτή η ετικέτα με το διαγραμμένο δοχείο απορριμμάτων σημαίνει ότι οι πελάτες και οι τελικοί χρήστες στις χώρες της ΕΕ δεν θα πρέπει να απορρίπτουν ηλεκτρονικό ή ηλεκτρικό εξοπλισμό ή εξαρτήματα στα απορρίμματα του νοικοκυριού. Οι πελάτες ή οι τελικοί χρήστες σε χώρες της ΕΕ θα πρέπει να επικοινωνούν με τον τοπικό αντιπρόσωπο παροχής εξοπλισμού ή το κέντρο υπηρεσιών για πληροφορίες σχετικά με το σύστημα περισυλλογής απορριμμάτων στη χώρα τους.

**ET**

**EUROOPA PARLAMENDI JA NÕUKOGU DIREKTIIV elektri- ja elektroonikaseadmete jäätmete kohta**

Euroopa Parlamendi direktiiv elektri- ja elektroonikaseadmete jäätmete kohta nõuab, et Euroopa Liidu maades müüdavatele tootele (või mõnel juhul pakendile) on peale pandud ratastega prügikonteineri märg, millele on rist peale tõmmatud. Elektri- ja elektroonikaseadmete jäätmete direktiivi järgi tähendab see märg, et elektroonika- ja elektriseadmeid ega nende abiseadmeid ei või utiliseerida koos majapidamisjäätmetega. Euroopa Liidus pöörduge oma riigi jäätmekogumissüsteeme puudutava teabe saamiseks seadmete kohaliku edasimügiesinduse või teeninduskeskuse poole.

**LA**

**Eiropas Savienības (ES) direktīva par elektrisko un elektronisko iekārtu atkritumiem (EEIA) (*Waste of Electrical and Electronic Equipment – WEEE*)**

Eiropas Savienības EEIA direktīva pieprasa, lai uz ražojumiem, kas tiek pārdoti ES valstīs, būtu uzlīmē ar pārkrustotu atkritumu tvertni (vai dažos gadījumos uz šo ražojumu iepakojuma). Saskaņā ar EEIA definīciju, šī pārkrustotās atkritumu tvertnes uzlīmē nozīmē, ka pircēji un gala lietotāji ES valstīs nedrīkst elektroniskās un elektriskās iekārtas vai to piederumus izmest kopā ar mājsaimniecības atkritumiem. Lai saņemtu informāciju par atkritumu savākšanas sistēmu konkrētā valstī, pircējiem vai gala lietotājiem ES valstīs ir jāsazinās ar savu vietējo iekārtas piegādātāju pārstāvi vai servisa centru.

**(NO)** Den europeiske unionens (EUs) WEEE-direktiv (Waste of Electrical and Electronic Equipment)

Den europeiske unionens WEEE-direktiv krever at produkter som selges til EU-land må ha fjernet søppelkassemerket på produktet (eller i noen tilfeller på innpakningen). Som definert av WEEE-direktivet betyr denne fjerningen av søppelkassemerket at kundene og sluttbrukerne i EU-land ikke skal kassere elektronisk og elektrisk utstyr eller tilbehør sammen med husholdningsavfallet. Kunder eller sluttbrukere innenfor EU skal kontakte en representant fra sin lokale utstyrsleverandør eller servicesenter for informasjon om avfallshåndteringssystemet i det enkelte land.

**(LT)** Europos Sąjungos (ES) Direktyva dėl elektrinių ir elektroninių atliekų (WEEE)

Europos Sąjungos direktyva WEEE reikalauja, kad prekės, parduodamos ES šalyse, būtų pažymėtos perbrauktos šiukšlių dėžės etikete (kai kuriais atvejais etiketė gali būti ant įpakavimo). WEEE direktyva nurodo, kad šis perbrauktos šiukšlių dėžės simbolis reiškia, kad pirkėjai ir galutiniai naudotojai ES šalyse neturi išmesti elektroninės ir elektrinės įrangos kartu su buitinėmis šiukšlėmis. Pirkėjai ir galutiniai naudotojai ES šalyse turi kreiptis į įrangos gamintojo vietinį atstovą arba aptarnavimo centrą, kur jiems bus suteikta informacija apie atliekų surinkimą jų šalyje.

**(SK)** Smernica Európskej Únie (EÚ) o odpade elektrických a elektronických zariadení (OEEZ)

Smernica Európskej Únie OEEZ vyžaduje, aby výrobky predávané do krajín EÚ mali na sebe (alebo v niektorých prípadoch na svojom obale) umiestený symbol v podobe preškrtnutej kolieskovej nádoby na odpad. Podľa definície tejto OEEZ smernice tento symbol preškrtnutej kolieskovej nádoby na odpad znamená, že zákazníci a koneční používatelia v krajinách EÚ by sa nemali zbavovať elektrických a elektronických zariadení alebo doplnkov vyhadzovaním ich do domáceho odpadu. Zákazníci alebo koneční používatelia v krajinách EÚ by sa mali obrátiť pre informácie o systéme zberu odpadu v ich krajine na zástupcu dodávateľa v ich lokalite alebo na

**(CZ)** Směrnice Evropské unie (EU) o odpadních elektrických a elektronických zařízeních (OEEZ)

Směrnice Evropské unie OEEZ vyžaduje, aby byly výrobky prodávané do zemí EU (nebo v některých případech obaly) opatřeny nálepkou s přeškrtnutým odpadkovým košem. Jak stanoví směrnice OEEZ, tato nálepka s přeškrtnutým odpadkovým košem znamená, že zákazníci a koncoví uživatelé v zemích EU by neměli likvidovat elektrická a elektronická zařízení nebo příslušenství jako komunální odpad. Zákazníci nebo koncoví uživatelé v zemích EU by se měli u místního zástupce dodavatele zařízení nebo u servisního střediska informovat o systému sběru odpadu v jejich zemi.

SL

**Direktiva Evropske unije (EU) o odpadni električni in elektronski opremi (WEEE)**

Direktiva WEEE Evropske unije predpisuje, da imajo izdelki, ki so naprodaj v državah EU, na sebi nalepko s simbolom prekrizanega smetnjaka (v nekaterih primerih je lahko tudi na embalaži). Kot določa direktiva WEEE, ta nalepka opozarja lastnike in uporabnike v državah EU, da električne in elektronske opreme ter dodatkov ne smejo odvreči skupaj z gospodinjstskimi odpadki. Lastniki in uporabniki v državah EU se morajo pozanimati o odvozu te vrste odpadkov v svoji državi pri svojih krajevnih dobaviteljih opreme ali centrih za popravila.

TU

**Avrupa Birliği (AB) Elektrikli ve Elektronik Gereçler Atık (EEGA) direktifi**

Avrupa Birliği EEGA direktifi AB ülkelerinde satılan ürünlerin etiketlerinde (ya da bazı hallerde ambalajlarında) ürünün çöp sepetine atılmaması gerektiğini belirten çapraz sembol konulmasını gerektirmektedir. EEGA direktifinde belirtildiği üzere, bu çöp sepetine atılmaması gerektiğini belirten çapraz işareti AB ülkelerindeki tüketiciler ya da son kullanıcıların elektrikli ve elektronik ürünleri mesken çöpleri/atıkları içinde atmamaları gerektiği anlamını taşır. AB ülkelerindeki tüketiciler ya da son kullanıcılar ülkelerinde uygulanan atık sistemi ile ilgili bilgi almak için ilgili ürünün bölge satış temsilcisi ya da servis merkezleri ile bağlantı kurmalıdır.

PL

**Dyrektywa Unii Europejskiej (UE) dotycząca zużytego wyposażenia elektrycznego i elektronicznego (WEEE)**

Zgodnie z dyrektywą Unii Europejskiej WEEE na produktach (lub w niektórych wypadkach na opakowaniu) sprzedawanych w krajach UE powinna być umieszczona ikona przekreślonego kosza. Zgodnie z definicją zamieszczoną w dyrektywie WEEE, ikona przekreślonego kosza oznacza, że klienci i użytkownicy końcowi w krajach UE nie powinni usuwać wyposażenia elektronicznego i elektrycznego lub akcesoriów razem z odpadami komunalnymi. Aby uzyskać informacje dotyczące sieci punktów, w których przyjmowane jest zużyte wyposażenie w danym kraju, klienci lub użytkownicy końcowi w krajach UE powinni kontaktować się z lokalnym przedstawicielem lub centrum serwisowym dostawcy wyposażenia.